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PRODUCTION

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IN THIS BOX SCORE OF TALL OIL USES

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| <input type="checkbox"/> ASPHALT WETTING AGENTS | <input type="checkbox"/> PENETRATING OILS |
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| <input type="checkbox"/> LINOLEUM | <input type="checkbox"/> SOLUBLE OILS |
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When you have checked your particular use, send us this Box Score, and we will recommend the Tall Oil Product best suited for your application.



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1

ACETONE—low-boiling solvent that permits high solids concentration, particularly useful in high-low lacquer systems. Good for paint and varnish removers.

2

MEK—low-boiling, strong solvency for all resins used in lacquer. Gives low viscosity solutions, high solids concentration, high diluent tolerance.

3

MIBK—medium-boiling with excellent solvency characteristics. Has high tolerance for diluents. Gives solutions of low viscosity and high solids concentration.

4

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5

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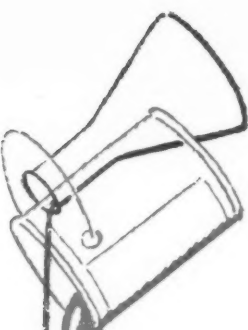
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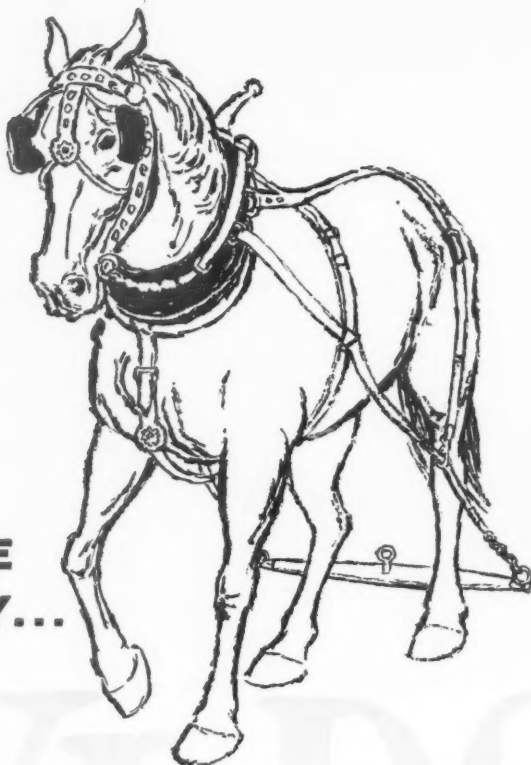
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SEPTEMBER
1960

Formerly PAINT and VARNISH PRODUCTION MANAGER
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VOLUME 50
NO. 10

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*In Our
50th Year*

NEXT ISSUE

Our October Special Convention issue will carry a comprehensive feature on Latex Emulsion for Exterior Wood. This exclusive feature will consist of specially prepared articles covering formulation, manufacture, surface preparation, application, and test results.

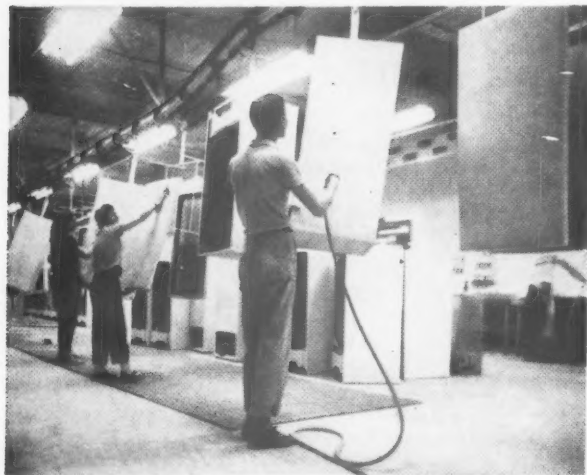
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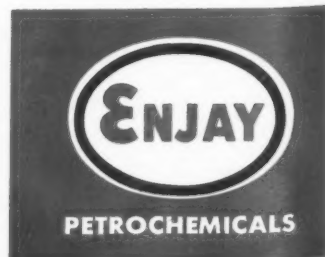
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EDITORIAL COMMENT

Our Special Convention Issue

UNDOUBTEDLY one of the biggest developments to hit the paint field during recent months has been water-based paints for application on exterior wood. In a vigorous effort to grab their share of this 50 million dollar a year market, producers of these new paints embarked on a broad marketing and advertising program this past spring designed to attract the interest of the "do-it-yourself" consumer. With such claimed features as non-blistering, high durability, quick-drying, and easy application and clean-up properties, such paints are bound to have considerable appeal among the homeowner.

In this connection, our October Special Convention issue will publish a comprehensive feature on "Water-Based Paints for Exterior Wood." This exclusive feature will consist of a series of articles prepared by experts in the emulsion paint field who will discuss formulation, manufacture, testing and application methods of these new paints.

To keep yourself up-to-date on this new and burgeoning field of emulsion paints for exterior wood, we strongly recommend that you read and study our October issue.

A Good Idea

RECOGNIZING the trend toward specialization, the Federation is planning technical sessions at its forthcoming annual meeting in Chicago to satisfy the knowledge requirements of as many persons as possible.

In a recent message to members of the Federation, president Raymond Adams announced that at Chicago there will be two production round table sessions "Straining, Filling, Labeling and Casing" and "Raw and Finished Material Handling." These are topics of interest to both small and large manufacturers. Attendance at each round table will be limited to twenty-five and no

prepared papers will be given. Rather, they will be typical round table affairs with each member present expected to participate freely in the discussion.

This will be welcomed news to production managers and plant superintendents who have complained that, in the past, the technical sessions were devoted more to research and formulation and less to production methods and problems.

There is much merit in the Federation's plan for including round table discussions at its annual meeting. Experience has shown that groups composed of between 15 and 25 people tend to function best. Such a size enables the presentation of various views which make for stimulating and fruitful discussions.

Simultaneous sessions with each session covering some special aspect of production, formulation, research, laboratory testing etc., will undoubtedly have wide appeal among those attending the annual meeting.

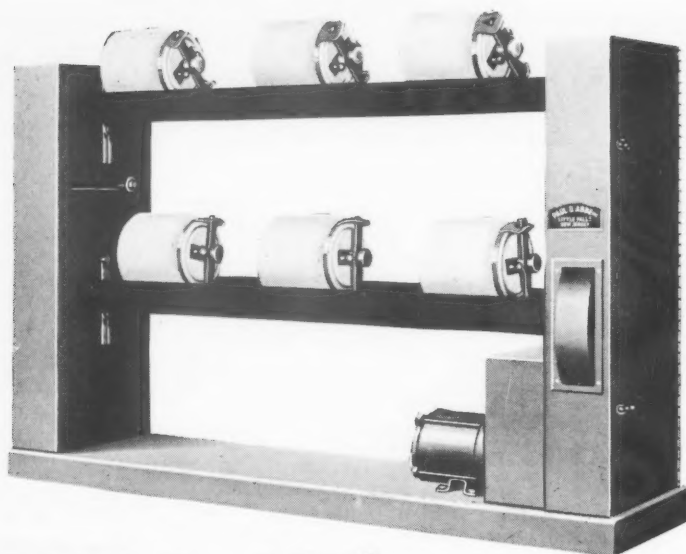
Automatic Batching

MAKING ice cream automatically is now possible by means of a punch card system.

Developed by Brown Instruments, Division of the Minneapolis-Honeywell Regulator Company, H. P. Hood & Sons of Boston, now operates the world's first fully automatic batching process for ice cream mix.

By means of coded punch cards, the electronic equipment opens valves sending basic ice cream ingredients from storage to blending tanks, measures their flow with electrical impulses from metering devices and then closes the valves when the pre-determined amount is reached.

Automatic batching systems have had only limited use in the paint industry. In view of recent successes in the baking, candy, and ice cream industries, fully automatic batching of paint raw materials is a definite possibility in the not too distant future.



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PUBLISHER
JOHN POWELL

EDITOR
ANTHONY ERRICO

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Marvin C. Feinstein,
Assistant Editor
J. P. Danforth, *Art Editor*
Lawrence Shatkin, *Production*
Vladimir Slamecka, *Foreign*
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Chicago
R. D. Henriquez & Associates,
549 W. Washington St., Chicago 6,
Ill. Central 6-1626.

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Here are five important reasons why you can expect ASBESTINE 325 to upgrade performance and lower costs in your current formulations or those you are developing.

1. Lowers Oil Demand—Proper selection of ore combined with "tailored" particle size distribution, i.e., oversize particles removed, intermediate sizes balanced and fines proportioned, accomplish this result.

2. Reduces Grinding Time—Is a stir-in grade. Absence of large particles and agglomerates, combined with its easy wetting characteristics, effect a Hegman of 4-4½ in minimum time with conventional mixing equipment.

3. Improves Leveling—Paints properly formulated with ASBESTINE 325 tend to exhibit improved sag resistance, easier brushability, and better leveling.

4. Aids Wetting—In oil, oleoresinous or water emulsion formulations ASBESTINE 325 wets easily. Because it wets readily, complete dispersion can be expected quickly and suspension maintained. Does not have after-wetting tendencies.

5. Lengthens Shelf Life—Tests show paints made with ASBESTINE 325 resist hard settling—even after prolonged storage. Fluid consistency is restored with quick agitation because of soft settling properties.

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Pliolite—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio



**PROGRESS
REPORT ON
MEDIUM OIL
ISOPHTHALIC
ALKYD
IB-1550**

SPECIFICATIONS

Solids $50 \pm 1\%$
Viscosity V—X
Solvent Mineral Spirits
Viscosity at 40% D-G
Color 7 Max.
Acid Value 5 Max.

DEVELOPMENT ■ IB-1550 was developed for application where fast dry, hardness, good color and color retention, good gloss and gloss retention and excellent flow properties are desirable. ■ A comparison of white enamels based on IB-1550 and medium and long soya phthalic alkyds shows IB-1550 excels in dry, gloss, gloss retention, yellowing and application proportions. In addition, IB-1550 formulations are free of haze, so often a problem with conventional alkyd enamels. ■ IB-1550 gloss and semigloss formulations avoid the use of lead driers and substitute Zirco-Cobalt-Manganese drier systems to get faster dry and better gloss and color. ■ Note in the specifications above that IB-1550 has a relatively slow viscosity reduction—important where final cost is a consideration. ■ Possible Applications: IB-1550 is extremely versatile and its high gloss and semigloss characteristics suggest use in trade sales enamels. Speed of dry and gloss are highly suited for air dry and low bake industrial finishes, implement enamels, auto refinishing, etc. Outstanding flow and excellent gloss and color suggest use in roller coating applications.

Samples, formulations and test procedure reports on IB-1550 medium oil isophthalic alkyd are available by writing to Cargill.

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342 Madison Avenue, New York 17, New York



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Eastman Isobutyl Acetate can frequently replace combinations of n-butyl acetate with sec-butyl acetate or n-propyl acetate at a lower cost per gallon.

Call your nearest representative and ask him to show you how you can save solvent money by switching to Eastman Isobutyl Acetate.

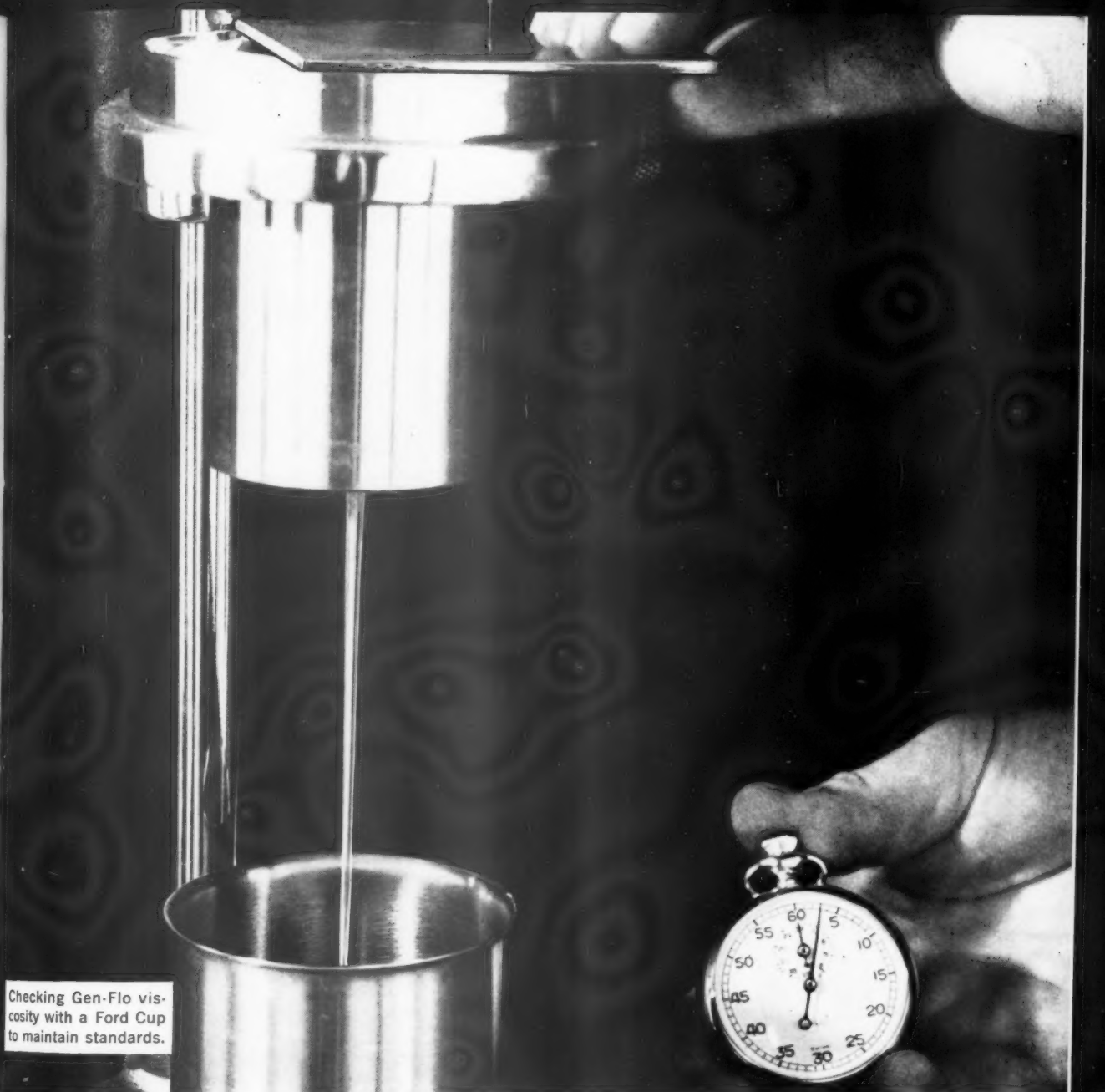
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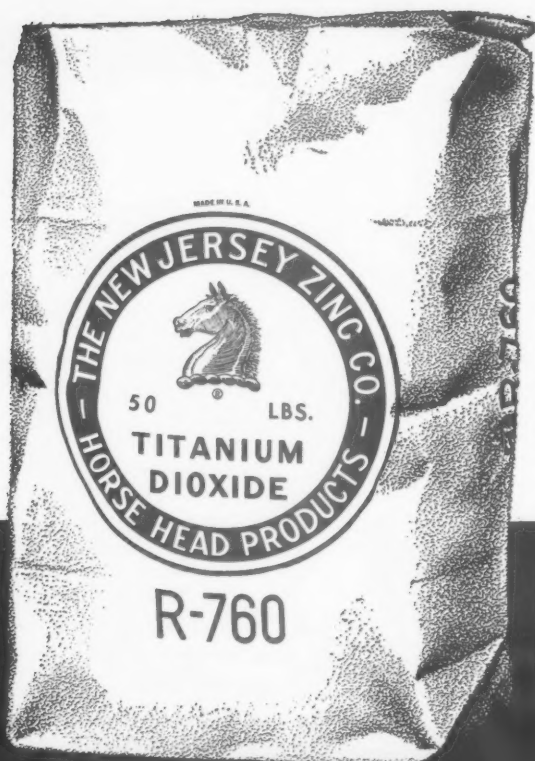
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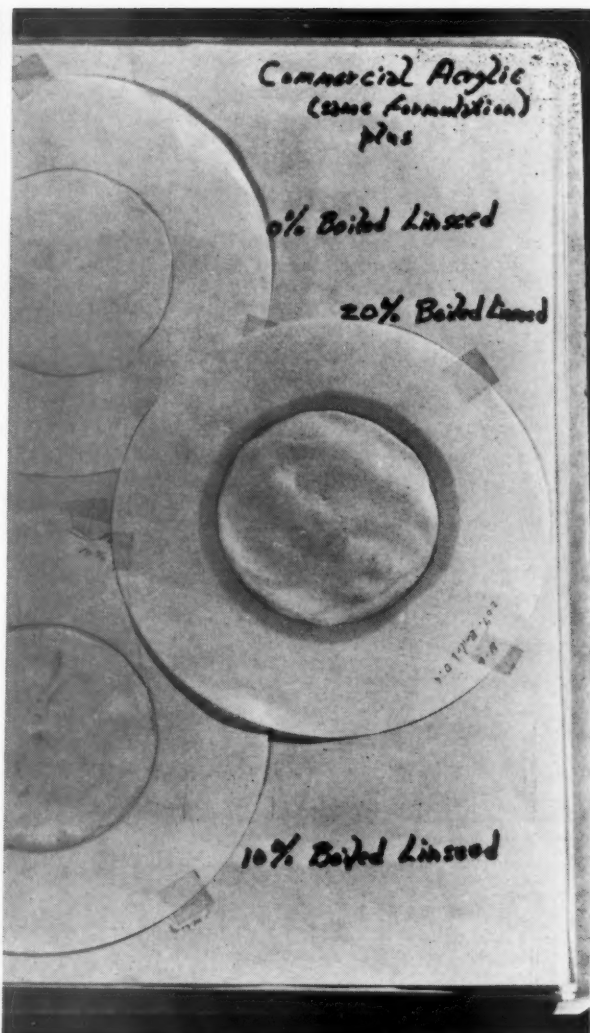
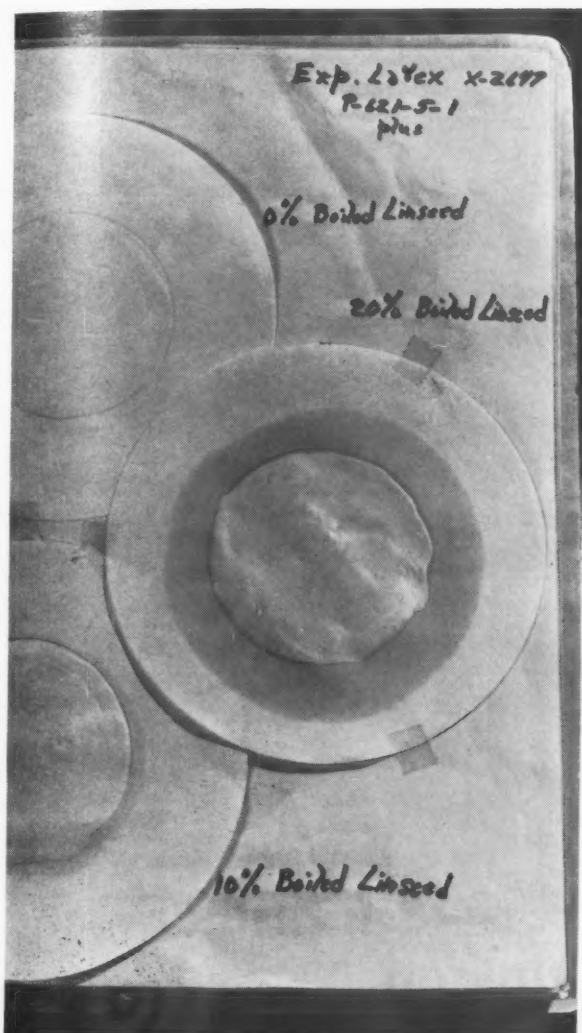
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LOS ANGELES**



LATEX



Oil Migration Test shows Dow Latex 2647 paint (left) exudes added oil to a much greater degree than other commercial latex paints.

NEW DOW LATEX 2647 PAINT FILMS STAY "TIGHT" even over heavy oil paint chalk

New Dow Latex 2647 and a special technique used by Dow Coatings Technical Service laboratory solve a problem faced by every manufacturer of repaint finishes for exterior wood. The problem: poor adhesion over heavily chalked oil paints. The answer—oil modified paints made from Dow Latex 2647.

Repaint finishes made from this new Dow latex show excellent adhesion over badly weathered oil paints when 10-20% of drying oil, such as boiled linseed, is stirred into the first coat of latex paint. It may be simply paddle-mixed by the dealer or painter, or it can be added as a last operation during manufacture of the paint. The oil/latex mixture is compatible. Slight separation may occur during shelf storage, but the oil remixes easily on hand stirring.

As the oil-modified Dow Latex 2647 paint dries, the latex particles coalesce and force the added oil out of the film. Oil forced to the surface does not affect adhesion of subsequent topcoats. And the oil forced out *beneath* the repaint film wets out and migrates into the chalk, firmly binding the new latex film to the unweathered surface of the previous oil paint. The second coat of paint does not contain oil.

Oil-modified repaint finishes are an important part of Dow's all-latex system—primer, topcoat, and repaint finishes—for exterior wood. For more information, or for assistance in formulation, write THE DOW CHEMICAL COMPANY, Midland, Michigan, Coatings Sales Department 1907DL9.

See "The Dow Hour of Great Mysteries" on NBC-TV

THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

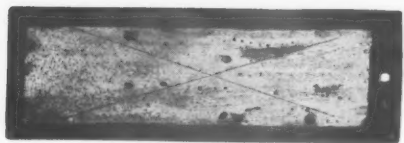
B-1030

a new and superior wash primer by Shawinigan

B-1030 is a new formulation for a two package wash primer based on BUTVAR, Shawinigan Resins' polyvinyl butyral resin. Developed especially to provide high early water resistance, B-1030 is also superior in adhesion to a variety of topcoats and substrates.



• B-1030



• WP-1.

B-1030 has demonstrated superior corrosion resistance. The steel panel shown at top was coated with B-1030, the other with WP-1. Each was exposed without topcoats to 5% salt fog for 500 hours. When the wash primer films were removed the panel protected by B-1030 showed much less pitting.

Other advantages of B-1030 are no hard pigment settling and lower cost per square foot when applied than WP-1. Write Shawinigan Resins Corporation, Dept. 4E, Springfield 1, Mass., for working formulations and technical data on BUTVAR and B-1030.

SALES OFFICES: ATLANTA CHICAGO LOS ANGELES
NEW YORK SAN FRANCISCO SPRINGFIELD

BUTVAR® polyvinyl butyral resins by



Brushing Up

**Marine finishes retain their beauty
and durability when pigmented
with Glidden Zopaque[®]
Titanium Dioxide**

Under the rugged demands of marine duty, paints require the lasting whiteness and brightness of Glidden Zopaque.

Zopaque assures high opacity, tinting strength and covering power. It is available in a variety of highly dispersible grades for finishes of all types.

Write now for full information on how Glidden Zopaque Titanium Dioxide can benefit the finishes you produce.



FINEST PIGMENTS FOR INDUSTRY

The Glidden Company
Chemicals—Pigments—Metals Division
Baltimore 26, Maryland

(This advertisement is printed on paper stock containing Glidden ZOPAQUE Titanium Dioxide.)



A paint man's two best friends

Of course we mean Thixcin® R and M-P-A®, the Baker additives unsurpassed for sag resistance and non-settling. That's what makes them particularly attractive to paint men.

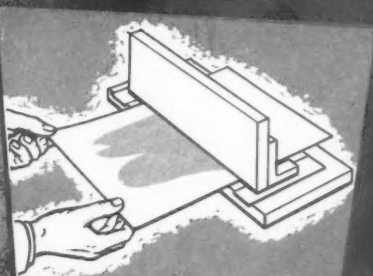
THIXCIN R . . . the best additive for paints processed at moderate temperatures and employing low KB solvents and oil vehicles. M-P-A . . . the non-seeding additive for processing at higher

temperatures, effective with all solvents.

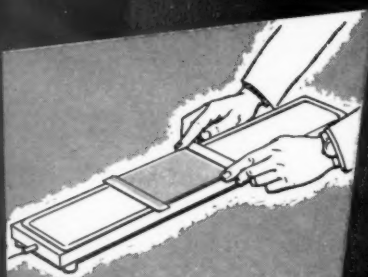
THIXCIN R and M-P-A, developed solely by Baker, are your best insurance for easy brushing and flow control. Ask your Baker salesman to introduce you to the paint man's two best friends, and their use in *your* formulation. Baker plants at Bayonne and Los Angeles, offices and warehouses in principal cities.

7417-A

the **Baker** ESTABLISHED 1857 **castor oil company**
BAYONNE, NEW JERSEY



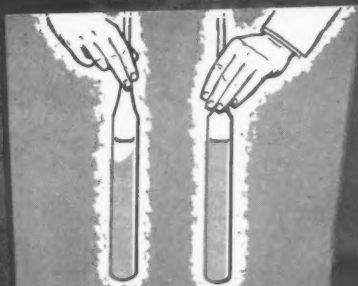
Draw-down bar used to determine strength of paint pigments.



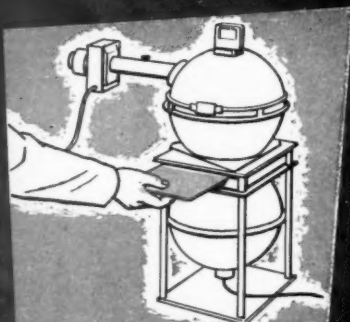
Covering Trough for testing water covering capacity of metallic pigments.

How Many

Hands To Create A Specification Pigment?



Spatula leafing test determines leafing properties of aluminum pigments.



Reflectometer is used to ascertain total light reflectance.

● Formulation of the right aluminum pigmented paint for the required application calls for many hands . . . and many heads! Metals Disintegrating Company has been supplying aluminum pigments to paint manufacturers for more than 30 years, and accordingly offers the experience and skill of a trained team of technicians who make up the Sales Service Laboratory. Utilizing the most modern testing and evaluating equipment, this department is at the disposal of all MD customers, ready to work with them in the development of ideas, and to supply technical data covering a wide range of aluminum paste and flake powder pigment applications.

Your local MD distributor, supported by the MD Sales Service Laboratory, is always a reliable source of information on technical problems.



METALS DISINTEGRATING COMPANY

Division of American-Marietta Company
General Offices, Department F, Elizabeth B, N. J.

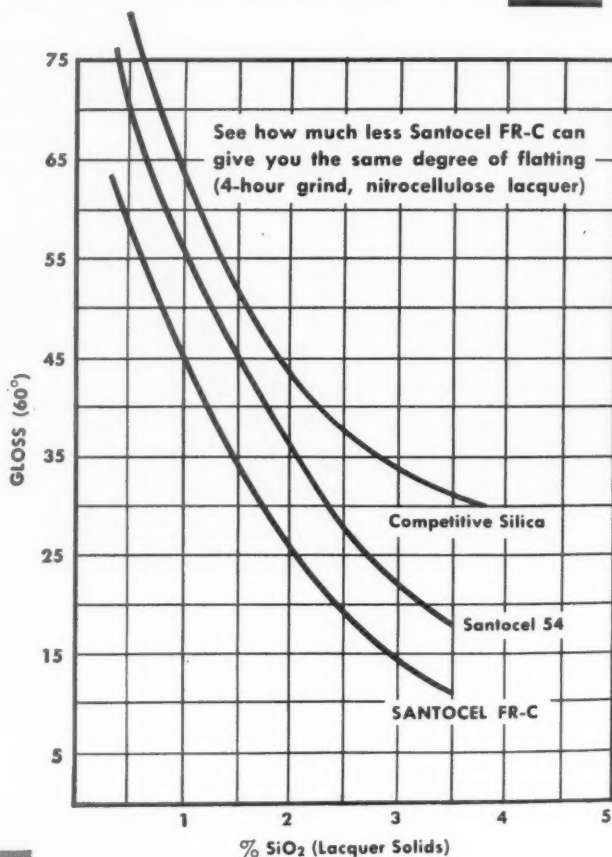
More clear lacquer and varnish is made with Santocel® than with all other silica flattening agents, because of

3 INDUSTRY-PROVEN ADVANTAGES WHICH SANTOCEL FR-C OFFERS YOU:

1 Cuts flattening costs from 20 to 40% because less is needed to do the job; provides the desired degree of flattening, from a matte finish to semigloss.

2 Helps produce a completely transparent, mar-resistant film. Free-flowing SANTOCEL FR-C is easy to handle, easy to use in ball mills and other standard dispersing equipment.

3 Stays in suspension for long periods; whatever settling may take place may be easily re-dispersed. In pigmented coatings, the fine aerogel particles actually act as an anti-settling agent for conventional color pigments (as little as 1.0% on your pigment weight can help maintain a stable pigment dispersion).



MONSANTO
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Inorganic
Chemicals Division,
Dept. 3032F,
St. Louis 66, Mo.



SANTOCEL FR-C offers you major proven advantages in oil-based varnishes, nitrocellulose and vinyl lacquers . . . in baked-enamel outside finishes for aluminum siding, and in similar coatings. For Technical Data Sheets on lacquer and varnish flattening and a test sample of SANTOCEL FR-C, call your nearby Monsanto sales representative or distributor, or write:

SUN ...

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WEATHER'S
WORST



CELANESE TRIMETHYLOLPROPANE

**adds outstanding protection, durability
and color retention to alkyd paints**

Here's how to improve alkyd paint quality without increasing cost. Paint formulations made with trimethylolpropane based resins withstand outdoor exposure and weather . . . adhere strongly . . . resist alkalis and detergents.

They impart hardness, impact resistance, and color retention on overbake or aging, to a greater degree than conventional alkyds. Dry and baking times are reduced, too.

Thus, in highly competitive fields, such as appliance and automotive, trimethylolpropane based resins provide marked competitive advantages.

Celanese Trimethylolpropane is promptly available in any quantity, at a price that's competitive. It is shipped in protective, multi-wall, polyethylene-coated aluminum foil-lined heat-sealed bags.

For complete data on how trimethylolpropane can improve paints, please write to: Celanese Chemical Company, Dept. 558-S, 180 Madison Avenue, New York 16.

Celanese®

Celanese Chemical Company is a Division of Celanese Corporation of America.
Canadian Affiliate: Canadian Chemical Company, Limited, Montreal, Toronto, Vancouver.
Export Sales: Amcel Co., and Pan Amcel Co., Inc., 180 Madison Avenue, New York 16.



Now EAGLE-PICHER offers a complete line of FAST-WETTING ZINC OXIDES



specifically designed for
intensive mixing devices

Eagle-Picher pioneers a complete group of fast-wetting zinc oxides which range from very low to very high paint making viscosities. These easy dispersing zinc oxides are the result of Eagle-Picher's extensive research and use-testing program, which continues, year after year, to bring new and better products to the Paint industry.

A complete range of fast-wetting zinc oxides from low to high paint making consistencies!

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Viscosity**

415W

**Medium-
Low
Viscosity**

417W

**Medium
Viscosity**

427W

**Medium-
High
Viscosity**

428W

**High
Viscosity**

Since 1843



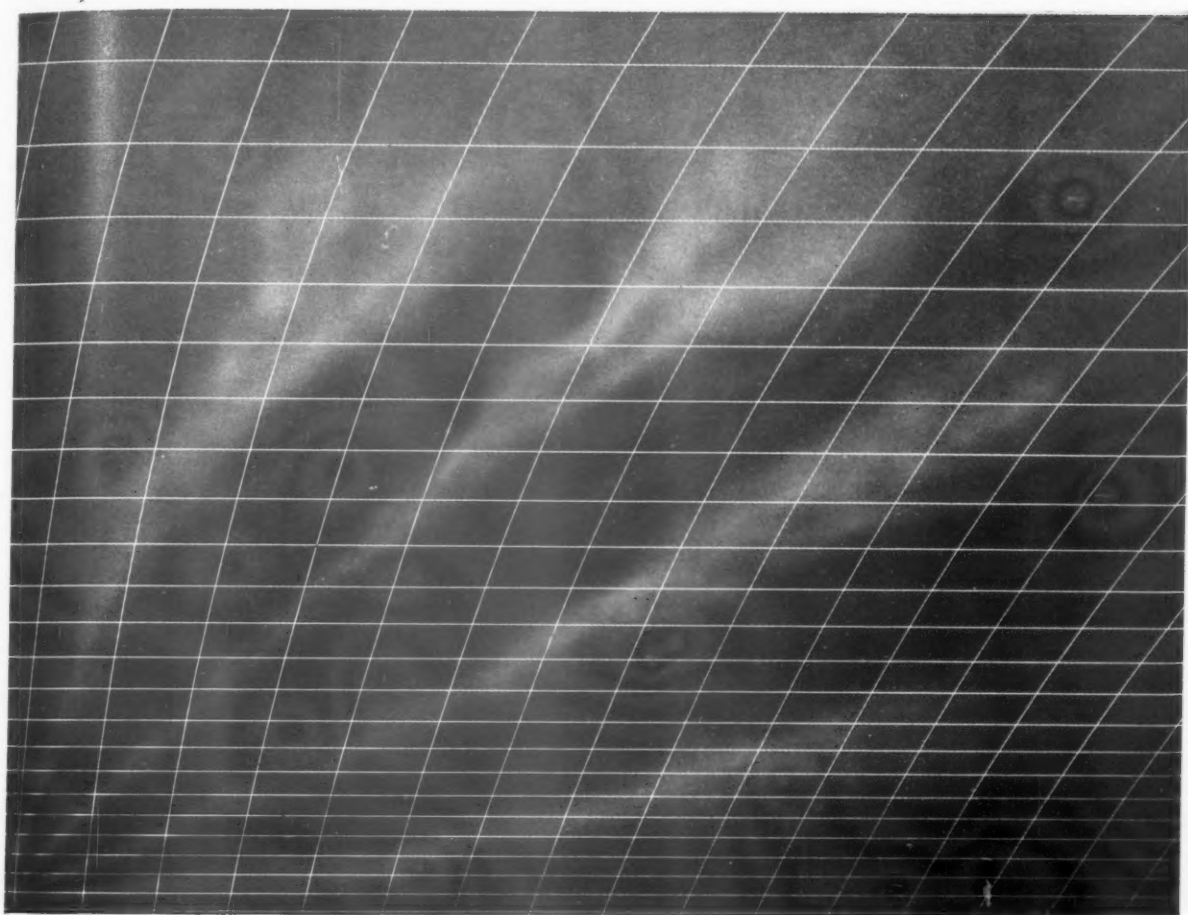
EAGLE-PICHER

Dept. PVP-960 Cincinnati 1, Ohio

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With a variety of evaporation rates . . .



SHELL AROMATIC SOLVENTS

SHELL TOLUENE . . . for applications where very fast evaporation and high solvency are required.

SHELL XYLENE . . . has an exceptionally narrow distillation range, is slower drying than toluene.

SHELL CYCLO-SOL® 53 . . . an excellent solvent with higher flash point and slower evaporation rate than xylene. Recommended for baking finishes and flow coating.

SHELL TS-28 SOLVENT . . . a still slower drying aromatic concentrate of medium high solvency. Recommended for baking finishes and flow coating.

Typical properties are given in the booklet shown. Write for a copy.



**FACT . . . FROM
SHELL RESEARCH**

Solvent viscosity
can make the
difference.

SHELL OIL COMPANY

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COVINYLBLAK®... a colloidal dispersion of carbon black in vinyl resin—chip form.



COVARNISHBLAK®... a colloidal dispersion of carbon black in a stable hydrocarbon resin—powder form.

COLUMBIAN...

outstanding carbon
black dispersions
for coatings

every step of the way!



COBLAC®... a complete colloidal dispersion of carbon black in nitrocellulose—chip & paste form.



AQUABLAK®... water dispersions of carbon black ready for use without additional grinding or processing.



CORESINBLAK®... a colloidal dispersion of carbon black in an alkyd resin base—paste form.

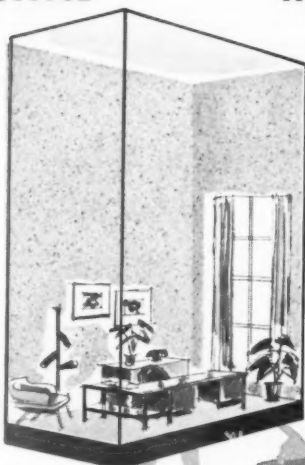
Whatever your need...Columbian's pre-dispersed carbon blacks will meet your most exacting requirements efficiently and economically. Columbian dispersions eliminate fear of contamination, are clean, dustless... give you unsurpassed quality...and end products that mean profits!

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HOSPITAL



Rooms go back to work **FAST** when **MARBON 1100T[®] MV RESIN** is the multicolor binder

Multicolor paints which are manufactured with Marbon 1100T mv Resin make a big hit in hotels, hospitals, and office buildings—and many other places where *people* are important. The after-job odor is low and vanishes quickly because Marbon 1100T mv contains only low-odor solvents. Rooms can be put back into service much sooner. Inconvenience is kept to an absolute minimum. Use Marbon 1100T mv low-odor Multicolor Resin for extra customer satisfaction—and extra sales.

MARBON 1100T MV LOW-ODOR RESIN OFFERS ALL THESE EXTRA ADVANTAGES:

- Requires only conventional paint-making equipment
- Reduces fire hazard because it uses low-flammability solvents
- Cuts cost of making multicolor paint
- Makes a thick mastic finish that hides cracks, pits, dirt
- Produces paint that requires only one coat—and no undercoat

Write today for full information!

MARBON CHEMICAL
WASHINGTON



DIVISION **BORG-WARNER**
WEST VIRGINIA

Surface coating improvements possible with New Dimer Acids

Dimer acid, already widely used in the surface coating industry, now has even greater potential with the introduction by Emery Industries of two new commercial grades, Empol 1014 and Empol 1024. Like the present standard commercial grade, Empol 1022, they are a mixture of dimer acid (C_{36} aliphatic dicarboxylic acid), trimer acid (C_{54} aliphatic tricarboxylic acid), and C_{18} monobasic acids.

New Low-Monobasic Grade

Empol 1024 is a low-monobasic acid (1% max.) version of Empol 1022 (approx. 75% dimer, 22% trimer, 3% monobasic). The less than 1% monobasic acid content of Empol 1024 is a valuable characteristic in resins where minimum chain-stopping is required.

High Dimer Grade

Empol 1014 offers considerable flexibility in formulation with its 95% dimer acid content (the balance is 4% trimer, 1% monobasic acids). Compounding with Empol 1022 or 1024 permits considerable variation in the dibasic-tribasic ratio to obtain optimum results for any specific coating formulation.

Advantages of Dimers

Because dimer acid can be used as both the dibasic acid constituent or the fatty modifier, it is unique in the surface coating industry. It has been used as a modifying agent in alkyds, varnishes and bodied oils. Essentially a pre-polymerized fatty acid,

it shortens kettle time and increases through-dry. Replacement of part of the phthalic or maleic anhydride increases flexibility and toughness. The 75:22:3 composition of Empol 1022 is excellent for these applications. The 22% trimer acid provides sufficient cross-linking, but still allows the incorporation of a sufficient amount of Empol 1022 before gellation occurs.

Polymer Applications

For formulations where 3% monobasic provides excessive chain-stopping, Emery offers Empol 1024. This contains 75% dimer for linearity, 24% trimer for cross-linking, and less than 1% chain-stopping monomer. For linear polymers, Emery's Empol 1014 with 95% dimer performs essentially like a long-chain member of the adipic-azelaic-sebacic family. Also, it increases the amount of dimer that can be incorporated in resins before gellation occurs.

Emery also has a 75% trimer under development for surface coating uses that require extensive cross-linking for flexibility and toughness. Drum quantities can be delivered with reasonable notice.

Price Reduction

The price of Empol 1022 was recently lowered to 25¼¢ per pound. Prices for the new dimers delivered in tankcar lots east of the Rockies are 26¢ per pound for Empol 1024 and 35¢ for Empol 1014 (a reduction of 10¢ per pound from its development tag).

Further information on these dimers is available from Emery. Request Technical Bulletin No. 418 covering the new acids or Emeryfacts "Empol 1022 Dimer Acid" from Emery Industries, Dept. X9A Carew Tower, Cincinnati 2, Ohio.





UFORMITE . . . for appliance enamels of high gloss

For gloss with economy, choose UFORMITE F-222 urea formaldehyde resin for your baking enamels. For premium finishes with maximum gloss and color retention, choose UFORMITE MM-57 melamine formaldehyde resin.

Either resin provides excellent resistance to food stains, soaps and detergents. Both resins resist discoloration if over-baked, giving a wide margin of safety in different baking times and temperatures. Both resins also permit high solids formulations at low viscosity, and both bake fast at normal baking temperatures to give finishes with excellent hardness.

Get technical notes and formulating information by writing to Rohm & Haas, today.

UFORMITE is a trademark, Reg. U.S. Pat. Off. and in principal foreign countries.



Chemicals for Industry

**ROHM & HAAS
COMPANY**

THE RESINOUS PRODUCTS DIVISION
Washington Square, Philadelphia 5, Pa.

UFORMITE

MM-57
F-222

SOME PERFORMANCES HAVE NEVER BEEN EQUALLED—



STANDARD FOR SKYSCRAPERS—Reaching majestically 102 stories and 1,250 feet into the sky, the Empire State Building is the world's tallest. In addition, a 222-foot television antenna towers above the building. Revolving searchlights installed on the 90th floor can be seen 300 miles away. More than 1,000,000 people visit the observation floor annually.

Look at Pine Oil

Someday someone may build a taller building than the Empire State Building—but it hasn't been done yet. And someday someone may invent a better all-round blending ingredient where high solvent performance is required.

Pine oil, of course, adds much more. Its wetting properties, bactericidal properties, and safety are well-known.

Pine oil, which has been in short supply for many years, is now readily available due to increased productive capacity. Look to Hercules for all the pine oil you need.

Just look at Hercules® pine oil's performance as a high-powered solvent:

	Kauri-Butanol Value
Pine Oil.....	500+
Toluol	105
Naphtha, H.A.	95
Turpentine	55
Naphtha, VM&P	34
Mineral Spirits	32
Kerosene.....	23

When everything is considered, pine oil still remains an outstanding ingredient for many diversified uses.

Pine Chemicals Division, Naval Stores Department
HERCULES POWDER COMPANY
INCORPORATED
900 Market Street, Wilmington 99, Delaware



NEW ^{HALF}_{SECOND} BUTYRATE/RESIN COMBINATIONS PRODUCE SUPERIOR COATINGS

Half-Second Butyrate has become widely accepted among lacquer formulators as a major film-forming material. Coatings based on it are noted for their low color, non-yellowing characteristics, toughness, flexibility, outdoor durability and high gloss.

Now even greater advantage can be taken of these properties. For recent work has shown that a number of important resins not generally considered in the formulation of Butyrate coatings can in fact be combined with Half-Second Butyrate to produce finishes of outstanding performance.

In many of these finishes, Half-Second Butyrate serves as a modifying resin; in others, it is the basic film-former. In either case, the combination results in coatings whose properties are significantly superior to those obtainable from either resin alone.

The characteristics of a number of these combinations are described here.

HSB/ Amino *Amino* resins modified with Half-Second Butyrate produce lacquers of increased toughness, improved sprayability and flow-out, more rapid air-dry and outstanding weather resistance. Half-Second Butyrate modified with amino resins, on the other hand, offers improved adhesion and abrasion resistance, and increased heat and solvent resistance. In both cases, the amino resins crosslink with the hydroxyl groups on the cellulose acetate butyrate molecule.

HSB/ Epoxy *Epoxy* resins of low molecular weight are used to modify Half-Second Butyrate to produce coatings with improved adhesion. In epoxy-butyrate-amino formulations, the epoxy resin acts to stabilize the system, increasing its storage stability significantly. Such formulations exhibit great toughness and flexibility.

HSB/ Polyurethane *Polyurethane* systems show improved build and better flow characteristics with the addition of a Butyrate resin such as EAB-381-20. This resin has a higher viscosity than has Half-Second Butyrate.

HSB/ Silicone *Silicone* resins, when added to Half-Second Butyrate formulations, further improve their outdoor durability and high gloss retention characteristics.

HSB/ Acrylic *Acrylic* resins, in combination with Half-Second Butyrate, show improved film performance in several ways over formulations based on acrylics alone. Use of Half-Second Butyrate builds solids content, improves sprayability, and imparts better solvent release characteristics. In addition, the coating is tougher and shows better weather resistance and gloss retention. The excellent adhesion and alkali resistance of Butyrate-acrylic formulations suggests their use on exterior structural aluminum.

HSB/ Maleated vinyl *Maleated vinyl* resins may be used—and only relatively small amounts are required—to improve the initial toughness and adhesion of Butyrate-acrylic films.

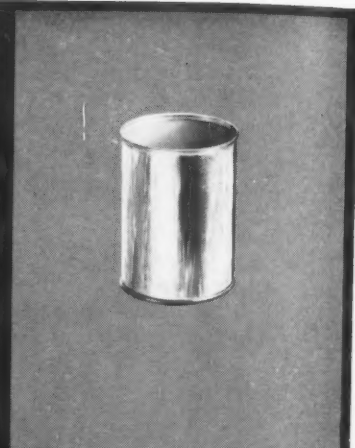
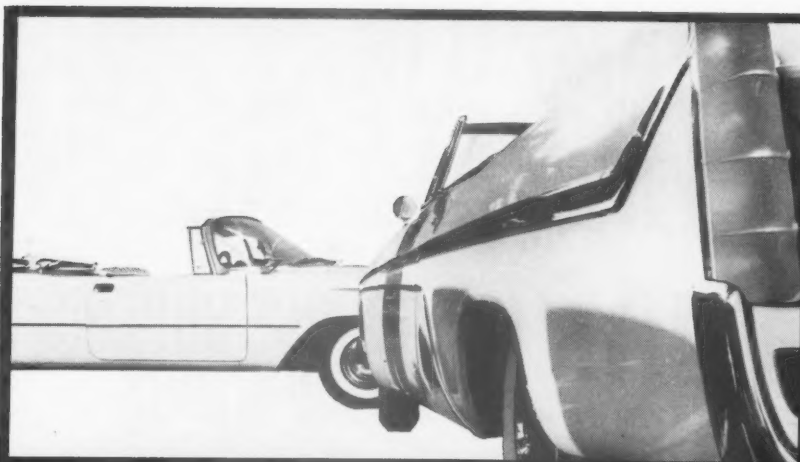
HSB/ Oil-free alkyds *Oil-free alkyds*, when incorporated in Half-Second Butyrate formulations, serve to improve adhesion and toughness.

HSB/ Polyester *Polyester* resins can be modified with up to 15% Half-Second Butyrate. The addition of Butyrate resins promotes leveling and brings about a sharp reduction in tack-free time.

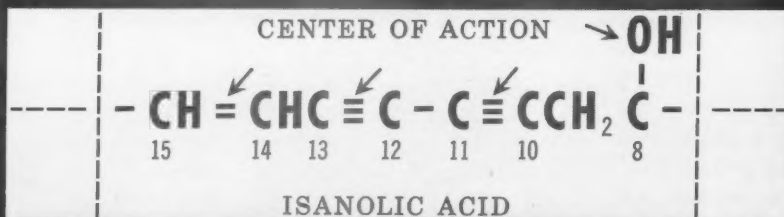
The results of these studies of Butyrate/Resin combinations are discussed in detail in Eastman's "Formulator's Notes 0.3." Starting formulations are included. Write or call the nearest Eastman sales office for your copy.

**HALF
SECOND BUTYRATE**
an Eastman film-former

SALES OFFICES: Eastman Chemical Products, Inc., Kingsport, Tennessee; Atlanta; Boston; Chicago; Cincinnati; Cleveland; Detroit; Greensboro, North Carolina; Houston; Kansas City, Missouri; New York City; Philadelphia; St. Louis.
West Coast: Wilson & Geo. Meyer & Company, San Francisco; Los Angeles; Portland; Salt Lake City; Seattle.



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PVO ISANO OIL with Epoxy Resins
gives Maximum Hardness
Greater Flexibility
Chemical Solvent Resistance



Continuing P.V.O. laboratory tests prove that Isano Oil Epoxy Resins can achieve new types of coating for you—with properties never before available.

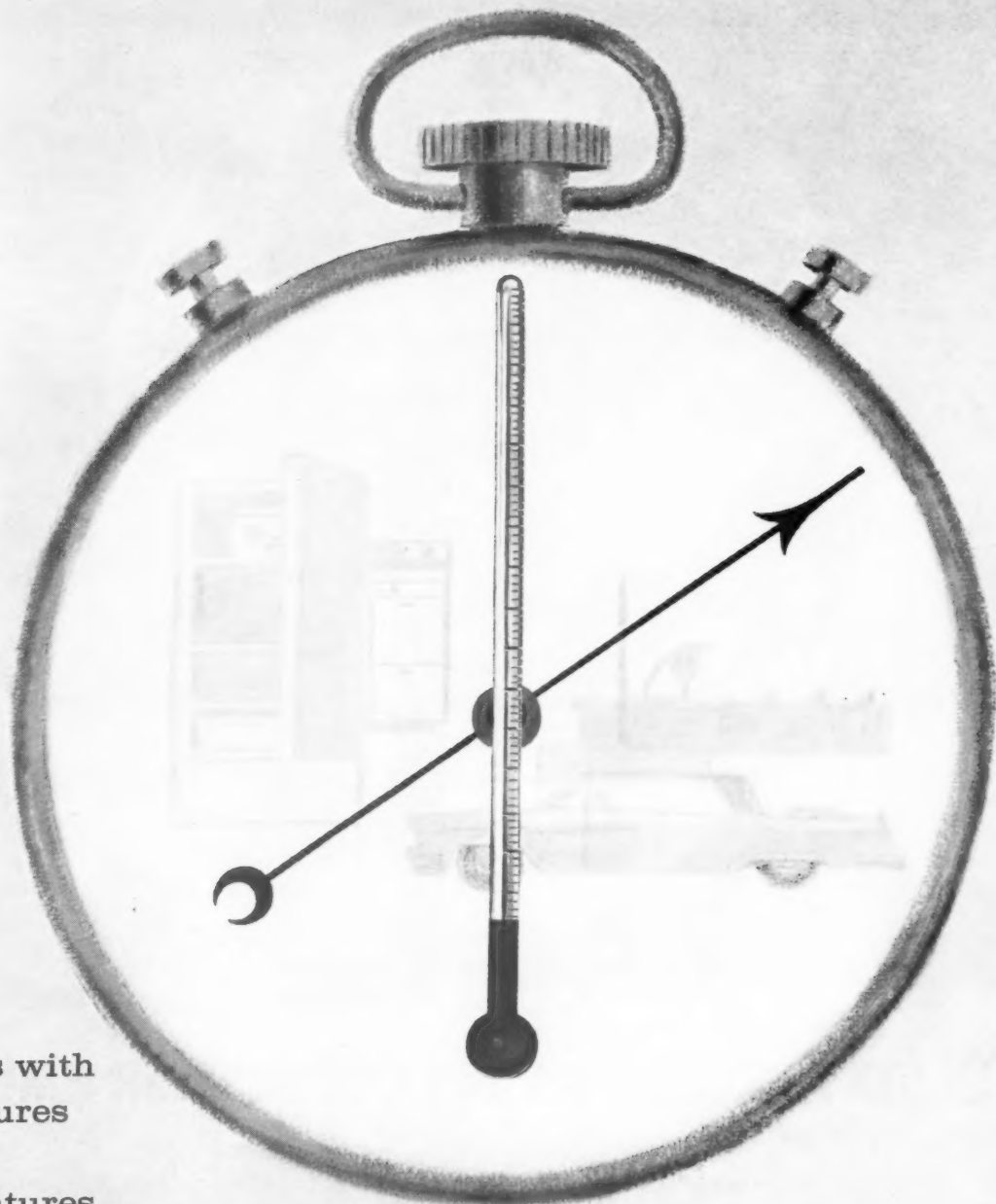
The unique chemical make-up of Isano Oil, and its reactivity to heat, leads to chemical and solvent resistant baked coatings that retain superior hardness, greater flexibility, and adhesion to a very unusual degree.

These desirable features and the moderate cost of Isano Oil indicate that, among the many other uses to come through research, superior formulations can be achieved in automotive primers, appliance primers, can coatings, drum linings and wire coatings. For our brochure on Isano Oil formulations with Epoxy and Phenolic Resins, and in Alkyds, write Dept.

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For
baking
finishes with
faster cures
at low
temperatures
for automotive,
appliance
and other
industrial
applications:

RESIMENE 879



Monsanto Surface Coating Resins include: Amino (Resimene) and Phenolic (Resinox) Resins; Styrene (Lytron) Latexes; Poly-electrolytes (Lytron); Vinyl (Opalon) Resins.

an etherified melamine-formaldehyde resin solution of 50% solids content in isobutanol. Formulated with alkyd resins for baking enamels. High cure response at 180° to 300° F. without sacrificing stability, gloss, gloss retention, color retention, or detergent resistance. **RESIMENE U-933**

for urea-alkyd finishes, requires no external catalyst to produce baking enamels with high cure response at temperatures from 150° to 350° F. without loss of properties. Write for data and samples to Monsanto Chemical Company, Plastics Division, Surface Coating Dept. 706, Springfield 2, Massachusetts.

MONSANTO DEVELOPER IN PLASTICS

LYTRON, RESIMENE, RESINOX, OPALON: REG. U.S. PAT. OFF.



IN VINYL ACRYLIC 2243 COPOLYMER EMULSION

1 VINYL ACRYLIC 2243 combines the best of vinyl and acrylic properties for exterior latex paints. It is a versatile base for latex paints superior in . . . scrubability, low temperature film formation, color and sheen uniformity, film flexibility.

2 VINYL ACRYLIC 2243 overcomes the problem of package stability for zinc pigment paints. Makes it possible to offer the exceptional tint retention, mildew resistance and resistance to ultraviolet provided by zinc pigments. In the words of the American Zinc Institute: "Now for the first time, the efforts of one manufacturer have been successful. National Starch and Chemical Corporation have perfected a latex, a polyvinyl-acrylic copolymer, for use with zinc pig-

ments in exterior paints. . . . This latex is worthy of close consideration on the part of latex paint formulators."

3 VINYL ACRYLIC 2243 offers these exclusive advantages at vinyl copolymer cost. Think of its merchandising possibilities. In premium mark-up as well as in advertising and sales promotion. Contact your nearest National office for full information.

National
RESINS

NATIONAL STARCH and CHEMICAL CORPORATION

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And All Principal Cities in the United States, Canada, England and Mexico



Fire Safety

and

Housekeeping

In the Paint Plant

EACH year fires in industrial plants cause large property losses and, more important, often result in loss of life.

Fire safety requires a properly balanced combination of building construction, fire extinguishing facilities, means for guarding against fire hazards and regular drills of the emergency organization; and it requires continuing administrative attention to maintain all of these features.

Combustible Interior Walls

Use of readily combustible wall-board or other quick-burning interior finish should be avoided. Fire

may spread rapidly along such interior finish endangering the safety of occupants.

Ordinary layers of paint or wallpaper are not considered to affect the flame spread characteristics of the material to which the paint or wallpaper is applied. However, multiple layers of paint or wallpaper may sometimes furnish fuel by themselves without regard to the material to which they are applied. This condition, too, should be avoided.

Concealed wall and ceiling spaces should be properly firestopped or sprinklered in all new buildings.

Unprotected concealed spaces provide a means for fire to spread and involve considerable areas before being detected. Lack of proper firestopping or sprinklers in concealed spaces has been a factor in many fires involving deaths and large property losses.

Flammable Liquids

The use of flammable liquids in paint plants has increased rapidly in recent years. Almost every owner of a plant finds it necessary to store and process some of these hazardous liquids. Unfortunately, the same characteristics which

make the liquids useful to this industry also create the serious fire and explosion hazards. A summary of some of the most common uses of flammable liquids in this industry is as follows: as unpolymerized synthetic resins—as plasticizers for various products—as solvents in film coating operations—as a component in the manufacture of coating and adhesive material—as a part of the coating material in dipping and spraying operations.

Flammable liquids are one of the major fire hazards in paint plants. A great number of the large loss fires in recent years can be traced directly to this cause. The process does not necessarily have to involve complex operations. For instance, one fire which exceeded the \$500,000 loss figure was caused by the escape of a flammable liquid from a filtering operation. The burning liquid flowed down a grade and quickly enveloped nearby yards stored with drums of solvents and manufacturing buildings. As the drums of flam-

mable liquid ruptured, the area became unapproachable and fire protection was delayed too long to be effective. If it is recognized that the existence of the entire plant is involved, then the year-round effort for fire safety will be justified.

The commonplace use of many flammable liquids in the paint industry has caused some operators to disregard the safety aspects of the problem and to become complacent. This has resulted in an ever increasing number of fires with consequent loss of life and property.

Fire Protection and Control

Practically every fire can be brought under control if proper

equipment is put into use immediately. The situation, however, is quite different for explosions. Since explosions cannot be controlled they must be prevented.

Flammable liquid fires are often extinguished by smothering. Starving this type fire from air is accomplished through the application of "foam", "carbon dioxide", vaporizing and dry chemical type of extinguishers. These materials can be applied through portable extinguishers or fixed systems. Where hydraulic fluid hazards exist, fire-resistant types are available.

Water is the most readily available of all extinguishing media and is usually obtainable in sufficient quantity to fight a large scale fire. The method of application of water may be a determining factor in its effectiveness. A solid stream of water applied directly to a burning flammable liquid may be ineffective and may be dangerous. However, if it is applied under pressure through spray nozzles, it can be positive. Water and foam can be applied through fixed automatic sprinkled systems. A good drainage system is recommended.

Fluorescent Paints

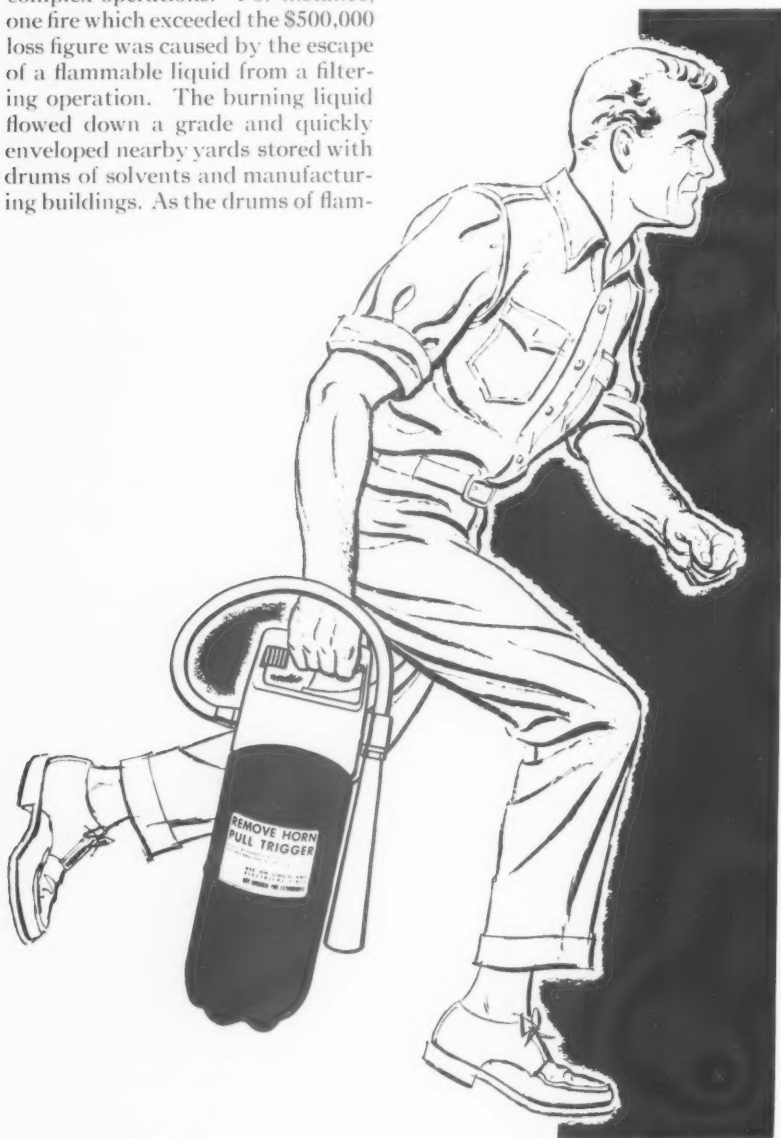
Use of daylight fluorescent paint to cut down work-a-day hazards is being used by many industrial firms.

Special safety painting is not new in industry. However, a new dimension of high-visibility brightness is added by the fluorescent paints to make safety color coding more effective.

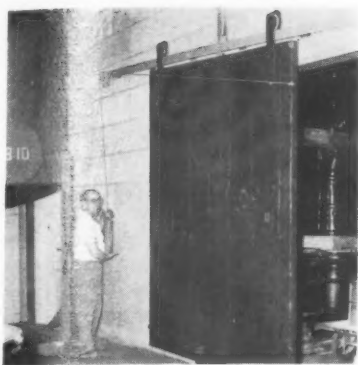
Secret of the eye-striking factor in fluorescent paint, is said to be the ability of fluorescence to convert almost all of the light's rays into one dominant color.

In one firm's safety paint program, 18 huge straddle carriers were painted from stem to stern with Fire Orange fluorescent paint. According to one of the spokesmen in charge of materials handling at the firm, "these carriers are considered a 'foreign object' when they enter the mill from the yard with a load of steel. It is imperative that the men see this intruder immediately—and what better way than with a paint that shouts at you!"

National Safety Council findings



Courtesy Walter Kidde & Co.



Safety door is tested to make sure it is in proper working condition.



For cleaning tools in solvents, safety can is used.

disclose that injuries from mobile equipment rank high. The company has made certain that its mobile equipment will be seen by painting electric trucks and fork-lift trucks with "Blaze Orange."

Knowing the importance of seeing fire protection equipment in times of emergency, 40 fire hydrants on the company's grounds are painted in "Rocket Red." The firm's safety painting was so comprehensive that even the employees' family playground slide was included.

Housekeeping

Good housekeeping, like safety, is everyone's business, but it is primarily management's responsibility to assure the existence of a clean and orderly work environment. Individual accountability for housekeeping varies with the degree of ability and authority to effect the

desired results, but the direct supervisors of people generally are considered to be answerable for conditions and actions of persons under their jurisdiction relative to every facet of efficient operation, including good housekeeping.

Housekeeping in industry must begin at the top. Management's interest in good housekeeping must be strong enough to make it a vital part of all activities. Housekeeping must receive the same continuous attention as do cost, quality and production.

The satisfactory control of housekeeping requires careful consideration of and planning for such factors as plant layout and grounds, nature and volume of materials to be handled, and amounts of materials required at successive steps of operation. The scope of housekeeping includes handling, storage and placement, piling, floor loading, tools, waste disposal, aisles and storage space, provision for leaks, drippage and spillage, layout of machinery and equipment and removal of all hazards.

The appraisal of the physical properties of the plant and yard layout for best housekeeping results should include careful consideration of:

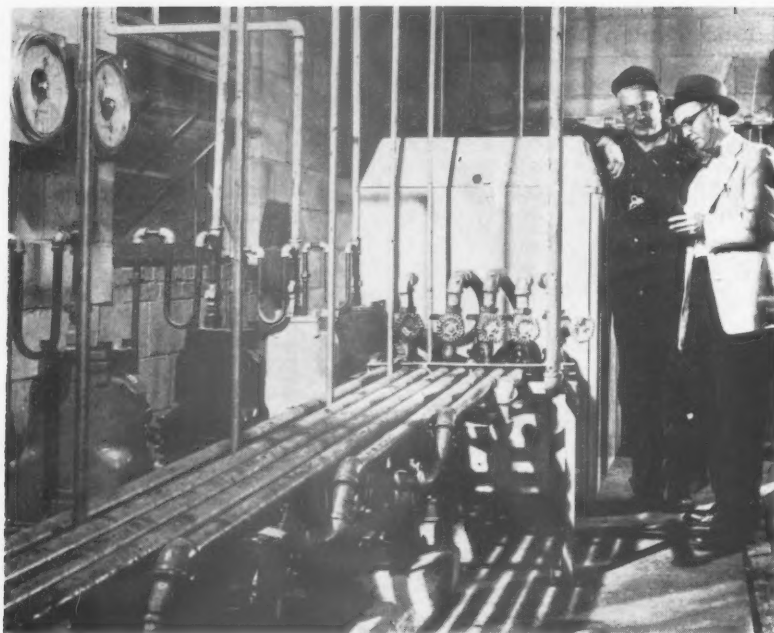
1. The proper arrangement of buildings to effect an even and orderly flow of materials from the raw ingredients to the finished products.

2. The proper location of pathways, roadways and tracks with relationship to each other as well as to buildings to control the storage and handling of materials and equipment and to regulate the flow of both vehicular and pedestrian traffic.
3. The proper grading and drainage of roadways and yard areas for efficient and safe use.
4. Provision of yard storage arrangements for raw materials, including both full and empty containers, to keep materials or equipment from falling or protruding into open walkways and passageways and to provide the best fire protection for the operations and buildings. The storage of miscellaneous drum stocks frequently presents a difficult housekeeping problem, and for this reason special consideration should be given to the provision of smooth surfaces upon which the drums can be handled. In some locations well-arranged storage racks are essential. Housekeeping in the storage of these materials involves proper clearances from buildings and nearby fire risks.

Equipment and operations should be arranged and located so that there will be an even and uninter-

PARTIAL LIST OF FIRE HAZARD PROPERTIES OF FLAMMABLE LIQUIDS COMMONLY USED IN THE PAINT INDUSTRY

Name	Flash Point °F	Ignition Temp. °F	Explosive Limits % By Volume		Vapor Density Air = 1
			Lower	Upper	
Acetone	0	1000	2.55	12.8	2.00
Allyl Alcohol	70	713	3.0	18.0	2.00
n-Amyl Acetate	79	750	1.10	—	4.49
Benzol (Benzene)	12	1000	1.5	8.0	2.77
Cellosolve Acetate	124	715	1.71	—	4.72
Ethyl Acetate	24	800	2.2	11.5	3.04
Ethyl Alcohol (Grain)	55	793	3.5	19.0	1.59
Ethyl Glycol (Cellosolve)	104	460	2.6	15.7	3.10
Methanol	52	867	6.0	36.5	1.11
Methyl Acetate	15	935	3.1	15.5	2.6
Methyl Ethyl Ketone	34o.c.	—	—	—	2.47
Naphtha	20	450	0.9	6.0	—
V. M. & P.	40	1026	1.27	7.0	3.14
Toluene	95	464	0.8	—	—
Turpentine	18	800	—	—	2.96
Vinyl Acetate	Gas	—	4.0	22.0	2.15
Vinyl Chloride	63	900	1.0	6.0	3.66
o-Xylene					



Working areas are inspected daily by plant supervisors and employees.

rupted flow of materials from the raw to the finished state and that congestion and possible "bottle-necks" will be prevented. Additional factors affecting house-keeping are as follows:

5. Stairways and stair en- closures should be kept properly illuminated and clear of all materials.
6. Aisles and passageways should be kept clear at all times for the safety of em- ployees and trucking opera- tions. Walkways and ramps should be entirely clear of materials and equipment. These should be properly identified by painted lines on the floor to clearly indicate

limitations and to encourage a better control of storage facilities.

7. Floors should be well design- ed and made of materials re- quiring a minimum of main- tenance. Surfaces should be kept clean and dry and free of holes or projections. Ac- cessories to this objective will include the use of such items as vacuum cleaners, floor cleaning machines, brooms, brushes, waxes, aisle marking machines, sweeping com- pounds, disinfectants, anti- slip surfaces, and noncom- bustible oil absorbents. Flammable cleaning solutions and highly toxic solvents should not be used on floors

since housekeeping practices should not create hazards.

8. Walls and ceilings should be free of unnecessary hangings, and windows should be kept clean and intact.
9. Building interiors and equip- ment should be kept well painted. This encourages employees to be clean and orderly in their work and personal habits. Functional painting or color condition- ing is an aid to housekeeping. It encourages orderly ar- rangement and helps keep employee morale at a high level. It is recognized, how- ever, that in some chemical operations the process ma- terials damage paint and dis- color surfaces so badly that the area becomes unattrac- tive but is, nevertheless, in accordance with good house- keeping requirements for safety.
10. Equipment or containers which leak or are subject to spillage, and thus create slipping hazards or toxic or flammable conditions, should be equipped with splash guards and drip pans to keep oil or other liquids off the floor. Dripping can be re- duced by proper oiling and good maintenance. Means of handling liquids should take spillage into account.
11. Tool rooms should be well designed and maintained so as to eliminate haphazard storage of tools around the plant. Tool cribs and tool racks will do much to en- courage good housekeeping and promote efficiency.



Posters help remind workers of the importance of safety and fire prevention in the paint plant.

National Safety Council

Maintaining Interest

Maintaining interest is a vital part of a good housekeeping program and embodies the attention, good will and wholehearted support of all employees. Furthermore, maintaining interest represents the right kind of "thinking" on the part of employees that good housekeeping is an integral and indispensable part of their job. Experience teaches that the necessary interest can be most effectively stimulated and maintained through a well-organized and diversified housekeeping program. Such a program depends largely upon sincerity of purpose. With this as a basis, the following methods and plans for maintaining interest will prove effective:

1. Regular housekeeping inspections. Since housekeeping goes hand in hand with employee safety it has been found beneficial for members of safety committees to assist in making housekeeping inspections. Effective procedures include:
 - a. Daily inspection by supervisors and employees of areas or operations for which they are responsible.
 - b. Interdepartmental inspection of areas.
 - c. Monthly inspection trips by department supervisors accompanied by employees responsible for safety and fire protection activities.
2. The organization of safety committees among the various groups of employees, consistent with line organization. This provides an opportunity for discussion and action on housekeeping problems at periodic meetings.
3. Publicity through posters, bulletin boards and employee publications. Posters should be colorful and to the point and should be changed frequently. Displays of bad practices, including photographs, can be used to advantage.
4. Housekeeping contests which promote a competitive spirit among employees and provide a means of recognition for individuals or departments showing exceptionally good records. Awards or recognition of a tangible nature to individuals and departments promote good will and cooperation on the part of employees. This should be done publicly by presenting a plaque or other award to the department having the best monthly housekeeping record.
5. Humorous awards in the form of a broom, white elephant, garbage pail, and stuffed dummies in impersonation of "Dirty Andy" and "Sloppy Joe" for departments having the worst records. These have been found effective in raising the standards of housekeeping in certain areas.
6. Rating systems and reports which can be used not only to establish control of housekeeping factors, but also to develop employee morale, stimulate competition and give management an over-all picture of the housekeeping status. If used consistently and publicized properly, a rating system will soon spotlight the conditions which account for poor housekeeping. Generally, rating re-



Improper storage often leads to serious fire and explosion hazards.

ports are broken down into four components—floors, walls, equipment, and storage.

7. Suggestion systems which encourage employees to contribute toward housekeeping. As a result employees think constructively on the subject and tend to follow good practices. Awards for suggestions are also productive in maintaining interest.

Adequate fire protection and good housekeeping in a successfully operated paint plant has been accepted as an important contributing factor to greater production, improved quality of products, improved employee morale, and to the conservation of both life and property.

The benefits and returns of such programs are largely dependent upon the conviction of the management that these programs are essential.

This article is taken in large part from information distributed by the National Paint, Varnish and Lacquer Assn., Washington, D. C.; Manufacturing Chemists' Assn., Washington, D. C.; and The Society of the Plastics Industry, Inc., New York City, N. Y.



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For full details on Celite pigment extenders, write Johns-Manville, Box 14, New York 16, N. Y. In Canada: Port Credit, Ontario.

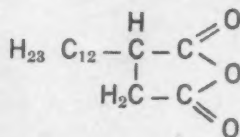
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about... National[®] DODECENYLSUCCINIC ANHYDRIDE

Here is a long-chain bifunctional alkenylsuccinic anhydride with an interesting configuration on which to build new intermediates and end products.



Note particularly the three points for addition reactions as steps toward new end products. Note also the positions of the oil-soluble alkenyl group and the hydrophilic reactive anhydride end.

DODECENYLSUCCINIC ANHYDRIDE finds use as an epoxy curing agent, polyester and alkyd resin inter-

mediate, corrosion inhibitor, etc. Many other uses are cited in the literature.

DODECENYLSUCCINIC ANHYDRIDE is one of a long line of dibasic acid anhydrides produced by National from basic raw materials wholly integrated within the Allied Chemical group. It is amply available in commercial quantities.

WRITE FOR TECHNICAL BULLETIN I-8

This six-page technical bulletin gives chemical and physical properties, principal reactions, infra-red absorption spectrogram, viscosity curve, suggested uses and a bibliography. A copy of this bulletin and a liberal working sample will be sent on request. Our Development Chemists will be glad to provide additional assistance to those whose work may lead to volume use of National Dodecenylsuccinic Anhydride.

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HYDRAULIC JET CLEANER CUTS BALL MILL CLEANING TIME

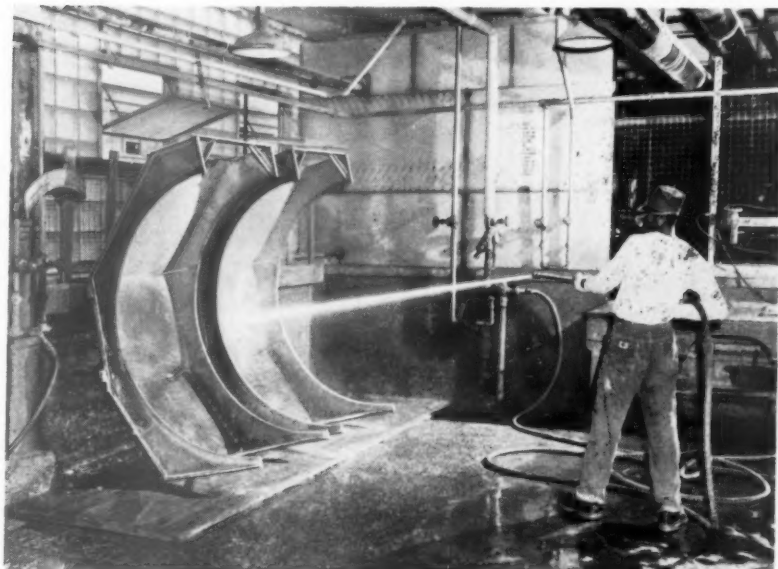
BY using high-pressure, hydraulic jet cleaning, companies are able to realize substantial savings in cleaning ball mill accessory equipment. And cleaning is more thorough than with former hand methods, eliminating the chance of contamination.

At American Cyanamid Co., Bound Brook, N. J., absolute cleanliness is essential in the firm's plastics department where Beetle and Cymel thermosetting plastic compounds are produced in more than 6,000 special colors. Even a small speck of residual material cannot be tolerated in the ball mills that powder these compounds. Any carry-over of material into a later batch might show up conspicuously on the surface of a finished molded piece.

To prevent contamination, ball mill grills, screens and housings, as well as cutter screens, were originally cleaned by hand, using wire brushes and a hot water hose. Some of the smaller screen openings had to be cleaned out practically hole-by-hole with a piece of wire or other small tool. Red, dark blue and other staining colors were particularly hard to remove, requiring about an hour of laborer's time to clean a single mill. Additional expense was incurred because a mechanic had to be called in to disassemble the grill before cleaning could begin. In spite of all these expensive precautions, there was still a slight chance that parts might not be absolutely clean.

Dissatisfaction with this inefficient cleaning technique led the plastics department engineers to search for a better method. After studying ways of handling difficult cleaning jobs in other plants they decided that high-pressure hydraulic jet cleaning might solve their

(Turn to page 86)



Shown cleaning ball mill housings at American Cyanamid Co.'s Bound Brook, N. J., plant, this hydraulic jet cleaner is said to prevent product contamination and has reduced cleaning time.



Unique Venturi mixing arrangement in the wall-mounted jet cleaner steps up water pressure to the high level required for effective scrubbing action to clean ball mill screens and grills.



Still in near-perfect shape, these cedar panels were taken from a house (shown below) which was painted 3½ years ago with a PVAc emulsion paint. Location: Blackburn Rd., Summit, N. J. When oil paint was used, house had to be painted every 3 years.

Exterior emulsion paints formulated with high-quality polyvinyl acetate copolymers meet the test of time . . . in film integrity . . . in tint retention . . . in resistance to dirt pick-up.

PVAc paints form a tough, flexible film that starts clean . . . stays clean. They dry to touch within ½ hour after application, are completely dry in 1 hour. And the protective film does not become tacky again—no matter how hot the sun. There's no pick-up of dirt, chalking is negligible and tint retention is excellent.

Exterior PVAc paints outperform both oil paints and acrylic emulsion paints. Ask your copolymer supplier to show you exposure data for different PVAc emulsion systems, to help you develop the formulation that's best for your area.

Write us for an informative folder, "PVAc for Quality Exterior Paints", that tells how you can increase your share of this expanding exterior paint market . . . at a greater margin of profit. We'll also be glad to send you information on Airco Vinyl Acetate Monomer—the raw material from which your copolymer supplier manufactures high-quality PVAc emulsions.



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PAINT

CLEANING PRODUCTION EQUIPMENT WITH NON-FLAMMABLE REMOVER

MANY production managers are finding that the non-inflammable paint remover which their company stocks for distribution to dealers and industrial accounts is economically suited for a number of their own clean-up operations. Areas that were formerly "dry scraped" at a high cost per man hour, can be coated quickly with remover—freeing the man applying it for other duties while the remover softens the old finishes for ready removal with scraper or wire brush. The use of a good non-inflammable paint remover allows one man to work two or three areas, compared to one area when dry scraping. Non-inflammable paint remover can be used with complete safety in any area of a paint factory, and without the use of non-sparking tools. Proper ventilation required for non-inflammable paint remover is comparable with ventilation required for the use of ordinary paint thinner.

Surfaces to be stripped around a paint plant usually demand the better grades of non-inflammable remover, based upon methylene chloride. The stripping of paint build-up from metal platforms, stairs, mill splatter, etc., pose little or no problem for a top quality stripper. A good non-inflammable stripper will soften from 8 to 12 coats of paint with each application. The real keys to any successful removal job lie in applying

a heavy, even coat, and letting the remover do the work. As the basic ingredient in remover of this type is methylene chloride, which boils at 104°F., any surface temperature approaching 90° puts a tremendous strain on the remover. That is, the volatile solvents tend to evaporate before the remover has been on the surface long enough to perform properly. It should be noted also that extremely cold surfaces tend to slow down the paint removal properties of a remover. The ideal temperature range for best removal results lies roughly between 65 and 85°F.

Perhaps the *extreme* test of a good remover is in cleaning let down tanks! Paint coatings in let down tanks will vary from measurements in mil thickness to $\frac{1}{2}$ to $\frac{3}{4}$ of an inch! The tank shown in Figure 1 was coated slightly over $\frac{1}{2}$ inch thick and consequently the side of a hand scraper was used to first *score* this film to assure the best possible penetration of the paint remover, and to conserve the quantity used. Vertical score marks were made at about 2 inch intervals. On extremely heavy build-up, the top layers are often loosened and scraped off, prior to or instead of scoring before applying the remover.

Application of remover can be made by one of the following methods. 1) The remover can be poured directly into the let down tank, and mopped onto the sides

(Turn to page 88)



Top: Remover is poured into tank. Center: Heavy coat of remover is swabbed or brushed on.

Bottom: Softened and blistered paint is scraped off.

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an analysis of the finished resins for product quality. Result: uniform high quality coating resins.

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PLASTICS AND COAL CHEMICALS DIVISION

40 Rector Street, New York 6, N.Y.

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REMOVING hardened paint from mixing vats was formerly a time consuming and irksome operation. This has now been overcome by using the pneumatic cleaning tool.

The unit is light, weighing approximately three and one half pounds and is constructed to enable operator to hold tool with one hand. A squeeze throttle is built into the handle and a power regulator is installed on the air inlet. This combination allows a wide margin of control which is continually under the direction of operator. The controlled hammer action used with a specially designed chisel enables the operator to quickly peel the hardened pigment in a fraction of the time formerly required using a hand method.

Good results can be obtained by following simple operation instructions, claims the distributor. Use as any hand chisel. It must be born in mind that with the power

AIR TOOL EASES CLEANING OF MIXING TANKS

Hammer action removes hardened paste.

regulator fully open or nearly so, great force is generated. Therefore, operator must not hold tool at too sharp an angle in relation to work (vat or tub may be nicked or dented). If tool is held at too low an angle, chisel may be "blown" out of tool due to decreased resistance. Familiarity and operator confidence comes quickly with use due to simplicity of construction and low weight to power ratio of unit. Operating pressure of ninety P.S.I. is recommended: $\frac{1}{4}$ " I.D. air hose

is ample in lengths up to twenty-five feet. Beyond this distance, $\frac{3}{8}$ " I.D. hose should be used to counteract internal hose friction. The use of a good filter-lubricator will prevent fouling of internal parts of tool and moisture damage.

Currently under development are non sparking type chisels. When a satisfactory design is evolved it will be marketed as an accessory to the basic tool. For details, contact U. S. Air Tool Co., Elmont, Long Island, N. Y.



Photo by Fenton

Left: After considerable use, layers of paint paste build up on the inside of mixing tank. Right: Hardened paste is quickly removed with pneumatic cleaning tool. Specially designed hand chisel facilitates cleaning of mixing tanks.



They're both dogs, but...

each is in a class by itself . . . like Wyandotte's PURECAL[®] O

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PURECAL O an outstanding advantage as an extender. No extra amounts of costly prime pigments (such as TiO_2) are required to mask the "off-white" effects of ordinary extenders.

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Soltrol 130 gives you conventional drying characteristics. Soltrol 170 provides longer wet edge. By varying the proportions of the two Soltrols you can get the exact drying characteristics you require. These water-white thinners are available in compartmented cars for your greater convenience. And there are other advantages in using Soltrol, too, such as . . .

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HOW THE SILICONES MAN HELPED... CUT COSTS OF HOT STACK PROTECTION

H EAT RESISTANT to 1200 deg. F., a low-cost, high-temperature silicone-aluminum paint using UNION CARBIDE R-64 Silicone has protected this exhaust stack for six months. And the stack is still like new.

This despite the fact that the stack—on a gas-fired, high-temperature fluid heater—has operated continuously at 1000 deg. F., with intermittent exposure to corrosive (HCl) atmosphere.

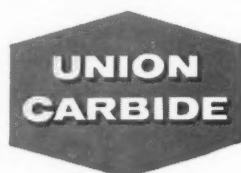
Formulated by a specialty paint manufacturer, the paint is based on R-64 silicone resin and aluminum pigment. The resin, recently introduced by the UNION CARBIDE Silicones Man, is espe-

cially designed for cold blending with alkyd, melamine, and acrylic type baking enamels to give them improved color and gloss retention, thermal stability, and resistance to weathering. Aluminum-pigmented R-64-alkyd blends have all the high-temperature properties of straight silicone-aluminum paints—with important cost savings.

For performance data and proven formulae, write to your Silicones Man or Dept. IQ-6001, Silicones Division, Union Carbide Corporation, 270 Park Avenue, New York 17, N. Y. In Canada: Bakelite Company, Division of Union Carbide Canada Limited, Toronto 12.

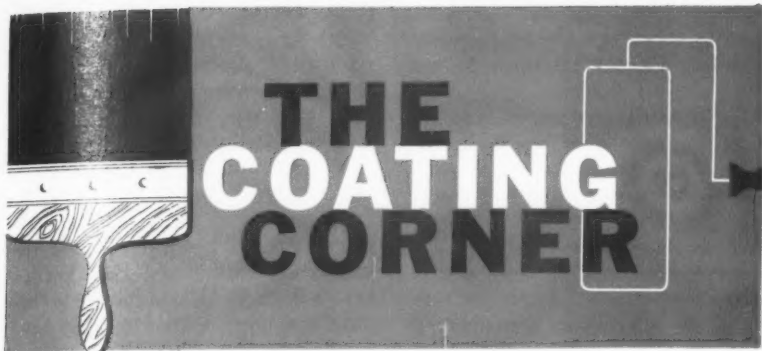
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PAINT



By
Edward Anthony

The author expresses his random reflections on various aspects of the paint industry. The opinions contained in this column are his alone and do not necessarily reflect those of this publication.

Polymers and Progress

FOR today's chemistry—as for so many of our current wonders—the ancient Greeks had appropriate and applicable words: *poly* (many) and *meros* (parts). And though we would today search far and wide for such as Demosthenes or Socrates (unsuccessfully, I am afraid!), modern chemists could show those great men of old a thing or two when it comes to the products described by their word union, *polymer*. The evolution of polymer chemistry to the science it is now, owes much to the searching analyses of Herman Mark (and others of his caliber); that one can now “design” a high molecular weight substance for a specific end use is dependent on such thought-provoking summaries as his 1959 Edgar Marburg Lecture (printed in the *ASTM Bulletin*, April 1960)—“New Polymers, New Problems.”

Consider the following excerpts for their stimulating and informative content:

“... polymers are, in general, very much softer than the other materials (‘used for the construction of buildings, vehicles, machines, and articles of daily use’), although the hardest plastics now approach the softest metals. It is also significant that the rigidity range of the soft and supple building materials is distinctly wider than that of the hard and brittle substances. This evidently stimulates the question: How could one

make still harder polymers in order to enrich the spectrum . . . and to produce a substantial overlapping of the two groups rather than to have a gap between them?”

Mark then expands on this, “. . . the (tensile) strength of metals and ceramics is, on the average, 20 times larger than that of polymers, but their elongation to break is correspondingly smaller. However, the strongest fibers are substantially superior to the weakest metals and there exists no gap here. . .”

He includes in his discussion such relative factors as specific gravity, thus: “In the case of a very strong metal such as tungsten and a very strong fiber such as nylon, the ratio of the strength to weight is in favor of nylon.”

Then follows a discussion of such polymer influencing factors as molecular weight, orientation, flexibility of macromolecules, and intermolecular attraction between the chains. Finally, “. . . there still exists a gap in certain properties of the metals and ceramics on one hand and synthetic ‘organic’ polymers on the other, and it would be desirable to bridge this gap . . . by the application of other principles and methods.” And thus is introduced the concept of the use of inorganic elements as the “backbone of the long-chain molecules of a polymeric system.” The silicone resins are the initial commercial projection of this idea, but other metal-oxygen

combinations are being explored—modified by organic ring systems—to narrow the differences between the classical organic polymers and such other construction materials as the metals and ceramics.

Many of these same ideas were presented by Mark in his 1955 Mattiello Lecture, “*Graft and Block Copolymers as Building Blocks in the Coatings Field*” (*Official Digest*, Nov. 1955). Further perusal of the *Digest* brought back to sight (and mind) numerous articles by Long, Payne, *et al*, that delve into the fundamentals of resin architecture. The formulating chemist would do well to re-examine his own store of knowledge along these lines. It is certainly true that most of the recent profound changes in paint have been wrought by the impact of polymer chemistry on vehicle development. Much progress has been recorded in the other three major components of surface coatings—solvents, pigments, and various additives—but they have contributed slow, steady improvement rather than the spectacular advances recorded in the vehicle field.

To take proper advantage of these newer tools of his art, is a measure of the ability of the formulator to grasp fundamentals as well as merely following tried-and-true recipes and approaches. Just as our everyday lives, coatings formulation is a series of compromises; in the vehicle portion it is usually the soft and flexible *versus* the hard and brittle: oil and hard resin in varnishes, alkyd and urea in baking enamels, plasticizer and cellulose nitrate in lacquers. Though this balancing of the properties of the various components is still the most used method of attacking a problem, there are increasing signs that the resin chemist is succeeding in building a host of single resins that incorporate and even improve upon the desirable properties of blends of more conventional types. Particularly in large organizations which pursue an active resin research program, the formulating chemist can offer invaluable assistance to his confreres in their attempts to “build” better vehicles, through a grasp of the elements of polymer architecture, and therefore be capable of offering constructive suggestions.

For "Laboratorians"

AS measured by the perspective of Father Time, it is but a short while ago that industrial laboratories came into being. Somewhat older, so I have read, was the small, crowded, sulphurous-smelling laboratory of the alchemist. In the centuries since that by-gone age and particularly in the past few decades, the laboratory has blossomed forth into a spacious, well-equipped area. It is occasionally housed in an edifice of its own, usually bearing the square, straight, functional look of current architecture.

This tribute to science and technology has been achieved by a relatively few organizations. The great multitude of smaller manufacturers are in the midst of much more humble stabs at reaping the benefits possible from a well-planned research activity. The Small Business Administration has published a short "primer" on this subject, "Setting Up A Quality Control and Technical Development Laboratory", by J. R. Irving. Such pertinent factors are covered as costs, salaries, taxes, equipment, etc., in a cursory but interesting manner.

Of more basic importance to the success of such an undertaking is the discussion concerning the philosophy of the objectives: "People fear most what they do not understand. Most of your production people—including a few of your management executives—may be very much afraid of the whole idea. If so, you must be extra careful about *preparation* and *timing* relative to the introduction of the laboratory. The key to success of a quality control laboratory is the individual who has to work *with* it. Essentially, if an individual has to work *for* a laboratory, it won't last."

The other side of the coin is also discussed: "The scientific worker is not necessarily a genius. But he does have the capacity for taking infinite pains. He is intellectually curious, eternally haunted by questions: What? How? Why? He has imagination and he's just as responsive to a word of praise or a pay boost as the next member of your work force. He wants to be an accepted member of your team. Perhaps his most distinguishing characteristic is a trained,

open mind. He gathers facts and classifies them logically and mathematically without reference to his own likes and dislikes."

And doesn't this sound familiar to anyone who is or has been employed by a small paint company: "In most small company laboratories, of course, technical people must 'double in brass.' They have to serve both quality control and research functions. . . . Quality control work may open the door to research. By the same token, research must delve into control activities. In fact, quality control is the application of ideas and techniques derived from research."

Adhesion

THIS topic covers many types of problems. For example, a film of bubble gum all over your little daughter's face, or a very loose button, hanging just by the proverbial thread, at a vital place on your wife's best dress—and you are already ten minutes late for that important appointment!

More mundane perhaps, is the continuing struggle to achieve adhesion between the organic coatings produced by the paint industry and the great multitude of various substrata that we are called upon to protect and beautify. The May 1960 issue of *Chemical Processing* reports that J. J. Bikerman of Massachusetts Institute of Technology is putting forth—and acting on—a new theory regarding the causes of adhesion of high polymers.

He believes that lack of adhesion between dissimilar materials may be caused by a thin surface film or "boundary layer" of low molecular weight molecules at the interface. This weak layer causes rupture of the whole film when stressed. Adhesion of polyethylene to glass, certainly unusual, has been achieved by chemically purifying the polymer of these "impurities".

This approach may be usefully transferred to other phases of the organic coatings industry, and may explain why newer methods of alkyd formulation such as Kraft's "molecular approach" produce resins of improved adhesion, among other upgraded qualities. The polymer size distribution maximizes the desirable high molecular weight fraction at the expense of the adhesion-robbing low mole-

cular weight ("impure") portion. Virtually every synthetic "cooked" resin might succumb to a particular improving technique that will narrow the "bell curve" of molecular weight distribution, making much more meaningful the term "average molecular weight".

Numerous types of testing apparatus have been developed for measuring adhesion—the appropriate A. S. T. M. committee is currently re-evaluating the many instruments—and Shell Development has come up with a novel approach. It was described before the Division of Paint, Plastics and Printing Ink Chemistry at the American Chemical Society's last National Meeting by Dr. H. Dannenberg (and reported in *Chemical and Engineering News*, April 1960).

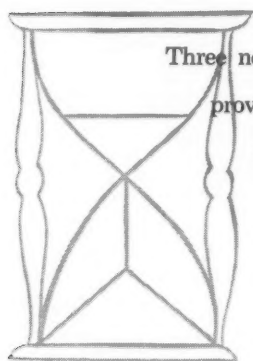
The object of this Blister Adherometer is to measure the pressure required to remove the coating. The principle of operation involves injecting a fluid—mercury or glycerol are recommended—between the organic coating and a metallic substrate, through access hole produced by electrolytically etching away the metal after coating or by previously drilling holes and covering them with aluminum foil. A shaped cover plate produces a blister about 9/64 in. wide by 1/8 in. long and 1/64 in. high. A fast-responding recorder is tied into the system, automatically charting a curve of fluid pressure *vs.* fluid volume. The area under the curve represents the work required to raise the blister, which is expressed in units of gram centimeters per square centimeter of detached area.

Producing proper adhesion is often quite a problem. Adequate metal preparation is a necessity; new formulative techniques may help. There are a number of commercially used devices to measure adhesion. But *testing* the adhesion of a coating, that is another story! In the rarefied atmosphere in which this scientific procedure takes place, the knife—or coin, or spatula—is deliberately (but carefully, even lovingly!) drawn across the helpless, immobile film; the sound of the scratch, the ribboning of the film: these are the evaluation yardsticks, the ultimate test of the physical quality of an organic coating!

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LAKOKRASOCHNYE MATERIALY I IKH PRIMENENIE

Continuing our coverage of the new Soviet paint publication, Lakokrasochnye Materialy I Ikh Primenenie, we direct your attention to two interesting papers: Synthesis of Alkyd Resins from Isophthalic Acid and the Passivating Properties of Chromate Pigments in Lacquer Coatings.

Studies on isophthalic acid show that the position of the carboxyl groups in the isophthalic molecule affects the rate of viscosity increase, the gelation time in alkyd cooks, and the character of viscosity increase with varying ratios of glycerine and acid content.

Passivating properties of zinc strontium, and a mixed barium-potassium chromate on steel duraluminum, and magnesium alloy corrosion were discussed at the All-Union Congress on Atmospheric Corrosion in Tropical Climates in November, 1959.

Synthesis of Alkyd Resins from Isomeric Phthalic Acids.

B. M. Dubrova, N. V. Burenkova, and N. M. Matveenko. *Lakokrasochnye Materialy i Ikh Primenenie*, 1 (1960), No. 2, 20-26.

The position of carboxyl groups in molecules of isomeric phthalic acids has a considerable effect on the rate of viscosity increase and the gelation time of resins, and also on the character of viscosity increase with varying ratios of glycerol and acid content. Both the viscosity rise and the time of gelatinization are faster for resins containing iso- or terephthalic acid than for those based on phthalic anhydride. Furthermore, complex esters of glycerol and isophthalic acid possess far higher temperature stability than esters based on phthalic anhydride. The authors cite the following advantages of using isophthalic acids instead of phthalic anhydride: faster polyesterification, elimination of acid loss, and better coating properties. Coatings based on isophthalic acids surpass those on phthalic anhydride mainly in stability to elevated temperatures, but also in drying, water absorption, and water resistance. Studied under atmospheric weathering conditions, isophthalic

coatings have shown superior resistance to cracking, and they also retain gloss better than phthalic anhydride coatings. Terephthalic acid cannot be recommended for the synthesis of oil-modified alkyd resins: it is unsuitable in technological processing, and its resin retains gloss to a much lesser degree than resins based either on isophthalic acid or phthalic anhydride.

Passivating Properties of Chromate Pigments in Lacquer Coatings.

I. L. Ronzenfel'd, F. I. Rubinshtein, and V. V. Zhebrovskii. *Lakokrasochnye Materialy i Ikh Primenenie*, 1 (1960), No. 2, 6-16.

A paper presented at the All-Union Congress on Atmospheric Corrosion in Tropical Climates, November 1959. The authors studied the passivating properties of zinc, strontium, and a mixed barium-potassium chromates in relation to steel, duraluminum, and magnesium alloy corrosion. As regards their passivating activity, these pigments form the following order: mixed Ba-K chromate > Sr chromate > Zn chromate (for steel and magnesium alloys); for duraluminum, the order is opposite. The introduction of ZnO into the pigment composition highly increases the passivating



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(Formulae for differently tinted M50 "Defense-in-Depth" Intermediate and Finish paints on request)

M50 PRIMER "Defense-in-Depth" M50 Paint No. 7 (T-9308)

Pigment	Pounds	Gallons
M50® (basic lead silico chromate pigment)	950.0	27.86
Siliceous iron oxide (85% Fe ₂ O ₃)	50.0	1.35
BENTONE® 38 (gelling agent)	5.0	0.33
	1005.0	29.54
Vehicle		
Raw linseed oil	267.4	34.50
Alkyd resin solution (70% N.V.)*	169.9	21.50
Mineral spirits	81.3	12.28
Zirconium drier (6%)	9.7	1.35
Manganese naphthenate (6%)	2.6	0.32
Cobalt naphthenate (6%)	1.3	0.16
Anti-skinning agent	1.0	0.13
Methyl alcohol-water (95-5%)	1.5	0.22
	534.7	70.46
TOTALS	1539.7	100.00

PVC 38.0% • Weight per gallon 15.40 lbs • *Fed. Spec. TT-R-266, Class A, Type I

activity of studies pigments. The paper proposes an electro-chemical method of determining the protective properties of coatings; the method is based on a study of the fundamental characteristics of the corrosion element in which both electrodes are made from the same metal but only one of them is coated with the coating. Using this method, the authors studied the properties of non-pigmented coatings on various binder materials, as well as the effect of Cr pigments in film-forming substances. A condition of the corrosion process—the effect of pigments on the kinetics of electrode reactions—was also investigated. The presence of chromate pigments in film-forming substances increases the anodic polarization of steel and duraluminum; Ba-K chromate causes the highest polarizing activity in steel, while Zn chromate has

a similar effect on duraluminum. The polarizing effect is even stronger when the water-premeable, castor oil-modified polyester resin is used as a base for film-forming materials. The protective properties of the coating film are considerably improved by addition of zinc oxide and a neutral filler (talc). The authors prepared highly anti-corrosive primers, based on epoxide-melamine resin and a mixture of chromates with zinc oxide and talc; these primers are being adopted industrially for application in tropical climates. The paper also describes some studies of the physico-chemical properties of film-forming substances pigmented with chromate pigments; it was established that coatings of polyester resin and toluene diisocyanate show minimum water and salt permeability, while coatings on an epoxide-

melamine resin base have lowest vapor permeability and lowest degree of swelling in water.

Rapid Determination of Degree of Pigment Grinding.

Bronstein, R. M., and Ivanova, A. S. *Lakokrasochnye Materialy i Ikh Primenenie*, 1 (1960), 67.

An apparatus, originally developed and patented by A. G. Rotenberg (see *Avit. Svid. No. 37* (1955), 452926) for ice cream analysis, is used by the authors for a rapid determination of the pigment grinding degree. The described method cuts the analysis time from about 24 hours to 5-15 minutes, depending on the pigment examined. The apparatus, shown in a schematic drawing, may also be employed for laboratory preparation of enamel.

Apparatus for Measuring Liquid Dosage in Batch Production.

Vinograd, Kh. L. *Lakokrasochnye Materialy i Ikh Primenenie*, 1 (1960), 83-84.

A description, with schematic drawings, of an electrical device of simple construction for adding liquid in batch processes.

Products of the Leningrad Lacquer and Paint Plant.

Brakhman, R. B. *Lakokrasochnye Materialy i Ikh Primenenie*, 1 (1960), 80-81.

The paper reports on five new products of the Leningrad chemical plant for paints and lacquers. 1) A new series of paints was prepared using the following ingredients: tung oil, styrene, benzoyl peroxide, cumene hydroperoxide, molten rosin, *p*-tert-butylphenolic resin, white spirit, turpentine, and pigments. The paints have better anti-corrosion properties than oil or enamel paints, they dry rapidly forming a glossy and hard film. Furthermore, no toxic solvent is used. 2) A new glythphalic resin, prepared by heating equivalent amounts of 88% glycerol and phthalic anhydride, is used as binder in the production of abrasive; its surface features superior purity. 3) New light-colored siccative-extracts are a solution of Pb-Mn-Ca salts of naphthenic acids in white spirit; distilled acidol is employed to impart lightness of color. 4) Soldering lacquer LTI-1 is effective in a temperature interval 250-480°C for iron and its alloys, zinc, nickel, cadmium, silver, etc.; it is a solution of rosin in ethyl alcohol, with addition of aniline hydrochloride and triethanolamine. It is also effective for soldering conductor materials having high resistance. 5) A treatment of shellac and polishing lacquers with cold oxalic acid (0.4-0.8% of weight of lacquer) or cold phosphoric acid (0.2-0.5%) prevents darkening of these materials in storage and in contact with iron containers, while retaining their properties.

50[®] Paint Systems Data Sheet AA

Metal Protective Paint Systems

M50 INTERMEDIATE "Defense-in-Depth" M50 Paint No. 4

Pigment	Pounds	Gallons
M50® (basic lead silico chromate pigment)	650.0	19.05
TITANOX® RA-NC® (titanium pigment)	150.0	4.29
Zinc oxide (acicular)	50.0	1.06
Magnesium silicate	100.0	4.20
BENTONE® 34 (gelling agent)	6.0	0.40
Phthalocyanine blue	0.6	0.05
	956.6	29.05
Vehicle	Pounds	Gallons
Raw linseed oil	263.4	34.10
Alkyd resin solution (70% N.V.)*	192.0	24.00
Mineral spirits (heavy)	112.0	16.80
Lead naphthenate (24%)	4.1	0.43
Manganese naphthenate (6%)	2.0	0.24
Anti-skinning agent	1.0	0.13
Methyl alcohol—water (95-5%)	1.8	0.27
	576.3	75.97
TOTALS	1532.9	105.02

PVC 37.0% • Weight per gallon 14.60 lbs • *Fed. Spec. TT-R-266, Type I

M50 FINISH "Defense-in-Depth" M50 Paint No. 3A

Pigment	Pounds	Gallons
M50® (basic lead silico chromate pigment)	400.0	11.74
Chromium oxide green (CP)	44.0	1.04
BENTONE® 38 (gelling agent)	2.8	0.19
	446.8	12.97
Vehicle	Pounds	Gallons
Alkyd resin solution (70% N.V.)*	486.0	61.55
Mineral spirits	174.0	26.57
Zirconium drier (6%)	9.1	1.27
Cobalt naphthenate (6%)	2.8	0.36
Calcium naphthenate (4%)	11.4	1.45
Anti-skinning agent	1.9	0.24
Methyl alcohol—water (95-5%)	1.5	0.20
	686.7	91.64
TOTALS	1133.5	104.61

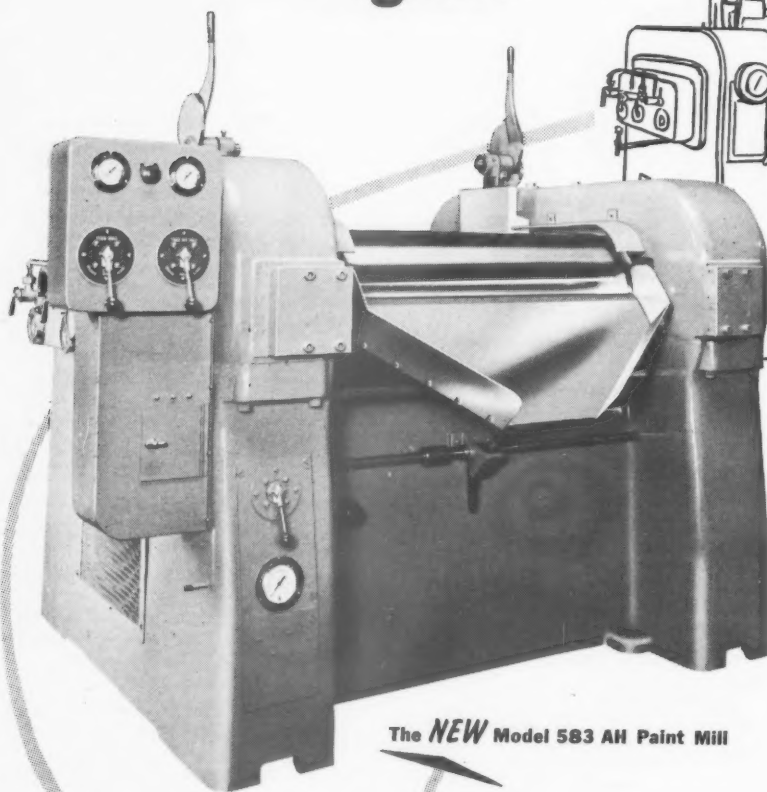
PVC 24.7% • Weight per gallon 10.83 lbs • *Fed. Spec. TT-R-266, Type I

NOTE: Prewet Bentone gellants with the methyl alcohol—water.

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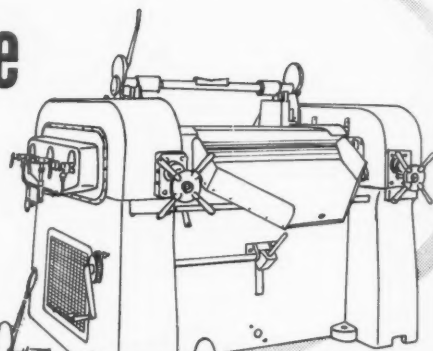
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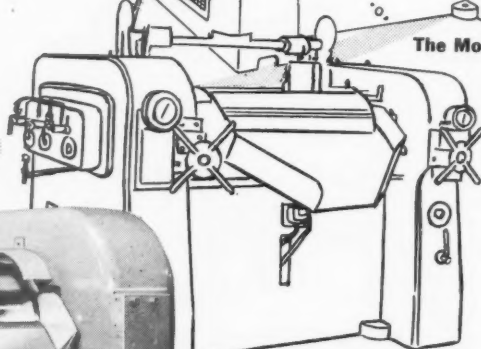


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Paint Mill



The Model 661 V Paint Mill

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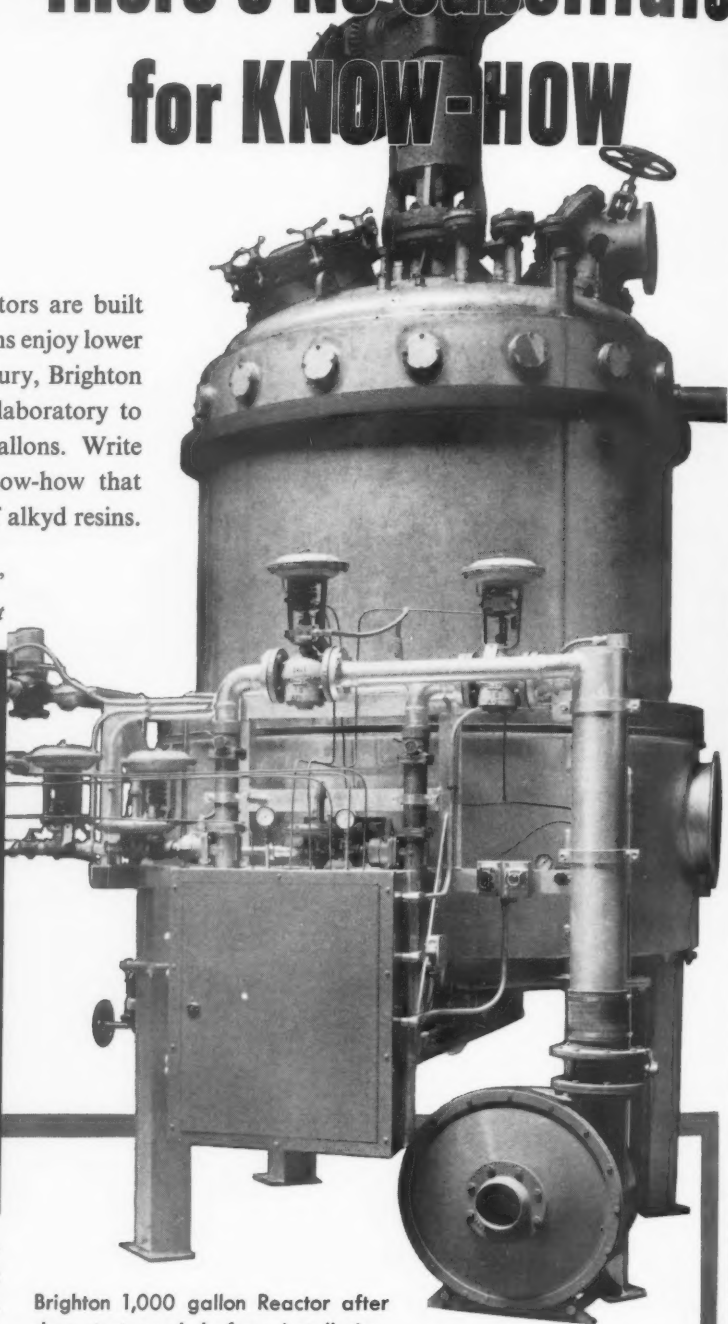
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PAINT

Management



— by Objectives

By

Lawrence Shatkin

IN our competitive, fast changing economy, it is absolutely necessary that improvements be made every year for company survival. This means that planning fundamentals must be encompassed in company philosophy and objectives. It calls for organized planning to achieve company goals for the immediate and long-term future. Planning should minimize the risks and optimize the gains. It is impossible to proceed in this direction unless we determine the purpose and philosophy of our business. Many of the goals of

business management have stressed the making of money or profits, paying dividends to stockholders, to be efficient and economical, to obtain a larger share of the market, or to provide for the welfare of employees. A more profound purpose has been expounded by the noted Professor Peter Drucker in his book "The Practice of Management." That is, *to Create a Customer*, to expand the business of present customers through better manager performance, worker performance, innovation, marketing, distribution and service, financial resources, and many other functions. Without this philosophy,

future plans and objectives become extraneous.

Planning the Program

The chief executive officer is the one primarily responsible for setting the over-all objectives of the company. Within this framework are the objectives of second and third levels of management that will contribute towards company goals. This program should indicate the aims, ways of meeting these goals, yardsticks for measuring management performance, and a periodic review and revision of the plan and program. These objectives should be dynamic, changing with the conditions of the time. The manager is held responsible

The opinions expressed in this feature are not necessarily those of any particular firm or organization.



Increasing productivity is a constant objective of production manager.

for meeting these objectives, and should integrate his time and efforts, through self-control, to ensure his success.

Participation in Setting Objectives

A manager who is accountable for meeting objectives should be given an opportunity in setting the goals and establishing the yardsticks for measuring the results. It is well known that a person will work harder if he is given a chance to contribute to the work plan. He will gain the most personal satisfaction and tend to "reach" out and "stretch" his thinking. These targets will seem fair to a manager because he has had a hand in formulating them. Through this participation will come better understanding and greater motivation.

The Manager's Letter

It is recommended at the beginning of each year a subordinate submit a letter to his superior listing the objectives of his superior and of his own job, how he intends to meet these challenges, what obstacles block his program, what the company can do to help him, and finally, the yardsticks he will use to measure his performance. A production manager could list the following objectives and plans for attainment.

Objectives

1. Increased productivity and production
2. Improved plant morale
3. Encourage foremen to develop themselves
4. More efficient purchasing

5. Improved relations and cooperation between production and laboratory.

How Objectives Will Be Met

1. (a) Introduction of new methods and procedures
- (b) Purchase of new machinery
- (c) Production activities analysis
- (d) Closer coordination between foremen
- (e) Realignment of personnel
2. (a) "Personalized" suggestion program
- (b) Use of a production committee
3. (a) Emphasize role of foreman—more leading, less details
- (b) Increased responsibility with commensurate authority



Consolidating raw materials aids inventory control.

- (c) Meetings
4. (a) Consolidation of raw materials
- (b) Joint program with the laboratory in evaluating materials
5. (a) Standardizing control checks
- (b) Simulating production methods
- (c) Maintaining accurate records

Yardsticks

1. x gallons/man-hr.
2. Number of gallons produced
3. Dollars saved in purchasing

LRP—Long-Range Planning

This is primarily a means of formalizing and extending present management practices. It gives a clearer picture of where the company is going, and focuses on major long-term growth to enable management to use its resources, time and effort most effectively. A long-

term program brings about an overlapping of objectives which is beneficial to a company, because it improves coordination and teamwork in solving major problems.

There are several factors that make it imperative to consider long-range planning. In the first place, your competitor is probably using it to gear short-range and long-range objectives concurrently. Secondly, technological innovations bring about overnight obsolescence of products and processes. Coupled with this factor is the shortage of executive personnel and skilled labor predicted for the next ten or fifteen years, which means, that an increase in size and complexity of management problems will cause increased management responsibility. As a result, it is important that all objectives blend into the over-all objectives of the company. Balance is achieved when short-range programs parallel long-range goals.

Projects

Within the sphere of short-range objectives (usually one year) are projects that are reviewed bi-monthly or quarterly. They are usually more detailed and concern operating functions such as production and sales. Several production projects could include: work sampling, a suggestion program, the study of filling procedures, etc. Priority ratings should be assigned to the different projects. As old



Maintaining accurate records of raw materials inventories is essential in meeting production goals.

projects are completed, new ones are added.

Committee Approach to Planning

The major objection to the use of committees, is the failure of anyone assuming responsibility for the group decision. However, the use of a committee, whether it be a research board, a new products group, a product planning group, or a corporate planning committee, is worthwhile in long-range planning because it is effective in obtaining the guidance of a cross-section of top management, who by their specialized knowledge could bring to the surface many thought-provoking ideas. Ideas for new products could be screened by such a committee, which in turn would help guide new product ideas to fruition.

Economic Indicators—Use in LRP

Two movements are always present in our economy. The long-term secular trend, which has been upward and somewhat predictable in its magnitude and the short-term movements which are usually unpredictable.

The first movement is described

by the theory of the self-generating cycle in which business activity follows a recurrent pattern. Economics indicators cannot predict when an upswing or downturn will occur. They usually recognize a movement only after it has started. In any event, some of the indicators used by long-range planners are:

- Number of new corporations
- Industrial-stock prices
- Wholesale prices, basic commodities
- Production (FRB index)
- Commercial- and industrial-construction contracts
- Unemployment
- Freight car loadings
- The GNP
- Personal income
- Retail sales
- Commercial installment debt
- Bank rates on business loans
- Manufacturers' inventories etc.
- Manager performance should be judged by results and not by ac-

tivity. The setting of goals should be specific, realistic, and measurable by providing a basis for judging and evaluating the performance of executives in their individual responsibilities. Individual targets are implicit in the job, and all efforts are directed to the over-all company goals. This planned performance makes managers "reach" out and think "bigger", and enhances future performance. It enables a manager to become self-directing through self-control, and this means better performance, more acute judgment, greater imagination, better forecasting, and broader vision.

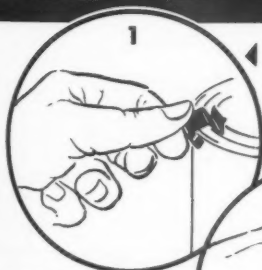
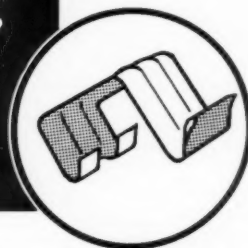
Bibliography

- Drucker, P. F. "Business Objectives and Survival Needs: Notes on a Discipline of Business Enterprise," *Journal of Business*, XXXI (1958), 81-90.
- Drucker, P. F. "The Practice of Management." New York: Harper and Brothers, 1954.
- Payne, B., and Kennedy, J. H. "Making Long-Range Planning Work," *The Management Review*, February 1958, 4-8, 73-79.
- Platt, Henry M. "Economic Indicators—Their Use in Business Forecasting," The Amos Tuck School of Business Administration, Dartmouth College, January, 1959.
- Read, Russell B. "Planning In The Larger Company," *The Management Review*, April 1958, 18-24.
- Roberts, W. E. "Planning In The Medium-Size Company," *The Management Review*, April 1958, 25-29.
- Schleh, E. C. "Management By Objectives: Some Principles For Making It Work," *The Management Review*, November 1959, 26-33.

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FREUND TRIPLE-GRIP CAN CLIPS



1 Hook clip under the rim of the can...and...press into lid groove with fingers.



2 Straddle the clip with the applicator...and...hook rim grip under rim of can.



3 Move the applicator upward--pressing the clip firmly into the lid groove of can.

Anyone can easily and quickly apply Freund Triple-Grip Can Clips. No skill, no experience required.

Simple illustrated instructions show how. And, the cost is only pennies per can. For convincing proof, send for special Try-It Kit and test in your plant--100 clips for gallon cans, 100 for quart and smaller cans, special applicator tool, and low quantity prices --post paid \$7.50.

Mail your purchase order today--your Try-It Kit will be shipped immediately.

FREUND CAN COMPANY

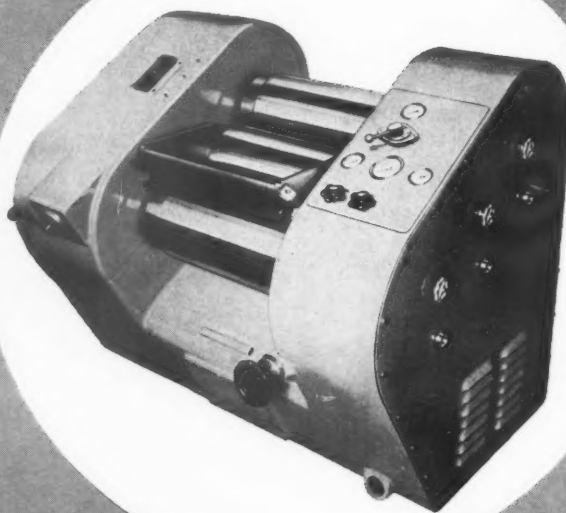
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New fully hydraulic

BUHLER 3-Roll Mill

SDA
Roll Dimensions: 10" x 20"

SDT
Roll Dimensions: 16" x 32"
16" x 40"



- Up to 60% higher output
- Absolutely even pressures for uniformly fine grinding

1. New hydraulic regulating system provides absolute pressure stability and easiest (1 second) setting of rolls.
2. Determines exact pressure for any formula and duplicates it for that formula at any time.
3. Rolls disengage for cleaning in 1 second. A simple hand-lever shift disengages rolls and scraper blade instantly. By shifting hand-lever back to operating position, rolls and scraper blade are restored to the exact pressure they were set at before disengaging.
4. New feed hopper arrangement increases working

surface. Hopper cheeks do not rest on the roll, but are hydraulically pressed to the shoulder of the roll; permit grinding across the whole length of the roll, with even wear.

5. Hydraulically operated scraper blade maintains selected pressure irrespective of wear. Never loses pressure — hydraulic control takes up automatically to maintain exact selected pressure with wear.
6. Can be furnished with variable speed drive for the first roll, or driven by a 2- or 3-speed motor. Regulating the speed of the first roll for paints and inks of different consistencies increases the capacity 60% and more.

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TORONTO 1, ONTARIO

THE problem of where to keep batch records and other quality control and laboratory data for easy access and in a minimum amount of space was solved at The Allentown Paint Manufacturing Company through the use of a visible-vertical filing system.

Allentown Paint has been manufacturing paint since 1855 and is considered one of the oldest ready-mix paint company in the United States.

T. G. Fenstermaker, president, sums up the problem this way:

Over this long period, hundreds of paint formulas and batch records have been accumulated. In addition, there is test data, ingredient lists, batch quantity information, etc., for each formula and batch of paint. A point was reached where all these important records were taking up entirely too much space in our paint laboratory. However, since it is necessary to keep these records handy for reference, a method had to be devised that would give more compact filing.

Our first attempt in this direction was to transfer the information to 4 x 10½ inch cards of our own design. These cards—at least one card for batch records, another card for paint formula—carried all of the information mentioned previously and did eliminate the necessity of keeping several different files. However, it was necessary to keep these cards in box files, which eventually proved to be too cumbersome — because of height and thickness of card stock — to handle and, in addition, still were taking up more room than we could afford.

Visible Filing System

We found the answer to our problem in the form of a VISIrecord visible-verticle filing system. We had incorporated these particular files in our sales department, where they are used as a base for an accurate, up-to-date sales control program. We believed that if the VISIrecord cards could hold all of the information necessary to keep track of some 800 accounts plus salesman performance records, they would be adaptable to the paint formula and batch records. Our beliefs were well founded.

KEEPING BATCH RECORDS FOR EASY ACCESS

Vertical Filing System Provides Compact Filing of Records at Allentown Paint Company

[illegible]

Front of visible-verticle filing card.

Locating a particular formula, or batch record (the batch record is on the front of the card, the formula record on the back, thus at

least halving the number of cards that were formerly necessary), can be performed in a single motion. The files are divided by key numbers, corresponding to the formula code numbers. To locate a batch record, all the chemist has to do is to flip open the file to the proper key number and the desired record is in clear view, ready to be removed. Or, the record can be read without ever having to touch it or remove it from the file. The whole location operation can be performed in three seconds or less.

A natural condition of paint laboratory work is paint-smeared hands. Since our records must be they are handled and smudged with paint, the longer they will last. This type of record file allows the

Where we formerly required several cards for our records, even after the first change to 4 x 10½ cards, we now have every piece of information we need to know about a certain paint on a single card. In addition to the code number, the card contains spaces for recording test results, ingredient list, dates for additional batches, the actual formula, the yield in pounds and gallons, and the size and type of containers that were filled from each batch. This latter piece of information is of considerable value to stock control.

Paint shading—a delicate operation—has been greatly speeded through the use of the visible vertical filing system. At a glance we can check just what pigments and their exact amounts were used in preparing a previous batch of paint. Accuracy in this phase is of extreme importance in maintaining a good reputation. Nothing will kill sales quicker than to have a customer ask one of our dealers for a second can of a particular color and then find it doesn't match the paint in the first can he bought.

We have been able, also, to incorporate a cost control feature into the visible-vertical filing system. By attaching a removable, plastic tag to a batch record, we have a flag to indicate that the batch is being checked as part of a cost-control program. The entire file can be scanned to check on these cost-controlled batches in a matter of minutes.

The hundreds of paint formulas, batch records, ingredient lists, etc., that were formerly housed in several cumbersome blind files, are now contained in one compact visible-vertical file that takes up no more space than before and gives us the dual advantages of visible indexing and the compactness of vertically-filed records. In addition, our formula-batch records are now well protected, with quick access for our chemists—features that have greatly speeded testing operations and helped maintain the high quality of our products.

TUBA

TUBE

		DATE							
STORMER ()	TUB W.M.								
FORD ()	CAN O.N.								
TUBE ()	TUB O.N.								
DRYING TIME									
WT./GAL.									
GLOSS	I. R.								
	AIR								
NO. GRINDS ()									
GRIND									
SKIN	16								
	12								

DATE	55	30	5	1	4	8	16	32	TOTAL

VISIrecordTM
 PL 5505A

ALLENTOWN PAINT MANUFACTURING CO.
BATCH RECORD

5X8 73
 NO. 236

Back of visible-verticle filing card.

CHARGE YOUR MILLS WITH...

HIGH DENSITY (SP. GR. 3.4)

Coors GRINDING BALLS



Save Time! Save Money!

REDUCE your grinding time 40 percent or more! Increased grinding efficiency results from the greater weight (Sp. Gr. 3.4) of Coors High Density Grinding Media.

INCREASE production of existing mills by taking advantage of the reduced grinding time—or you can increase the batch and get more volume from your mills on your present grinding schedule.

IMPROVE milling results—by operating your mills at lower temperatures, by eliminating excessive amounts of unground material, by making it easier to clean the media and by getting longer wear from the media and the mill lining.

We shall be glad to give you our recommendations on how to achieve these results if you will write to us on your company letterhead and describe your operating problem.

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THE RIGHT BALANCE

in
HIGH DENSITY
and
TOUGHNESS
for most efficient
grinding

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BALLS and BLOCKS

ARLCITE'S high density and tough bond strike the optimum balance between weight and wear resistance for lowest cost grinding. Fastest grinding is assured without sacrificing rugged wearing qualities. Research and plant production records prove conclusively that only ARLCITE provides this RIGHT combination for the most efficient and economical grinding performance.

The tongue and groove feature in ARLCITE blocks insures an interlocked, tightly keyed lining with narrowest cement joints. For further information on ARLCITE balls and blocks, write for bulletin.

**PORCELAIN
DIVISION**

FERRO CORPORATION
East Liverpool, Ohio

New

Developments

Carbide Announces Availability of Unox Epoxides 201, 206, and 207

Union Carbide Chemicals Co. announces that Unox epoxides 201, 206 and 207 are now available in commercial quantities and are being produced at the company's Institute, West Virginia, plant. These new epoxides are the only commercial-scale epoxides with cycloaliphatic structures.

Unox epoxide 201 has a low viscosity at room temperature without the use of special solvents or reactive diluents that would normally enter into the reaction and degrade the properties of the cured plastic. Because of this low viscosity, voids in castings are filled and bubble formation is reduced. The low viscosity of Unox 201 also permits better penetration of both glass fiber laminates and prefilled molds.

Unox epoxide 206 serves as an excellent reactive diluent for epoxy resins derived from either Unox epoxides or the bisphenol-A-epichlorhydrin types. Unox 206, a diepoxide, reduces the viscosity of epoxy resins without degrading their important properties. This degradation is typical of monoepoxides such as butyl glycidyl ether.

Unox epoxide 207 forms epoxy plastics that have excellent high-temperature physical and electrical properties. Its low combining weight provides added savings when used to cross-link or modify low cost resins and polymers.

Schenectady Varnish Co., Inc. was intrigued by the possibilities inherent in the chemistry of the diepoxides.

At first its interest was quite academic.

The high cost of the epoxies eliminated them from the competition for many jobs, regardless of the unique qualities they offered. Once

Schenectady was confident of a lower cost level, it began to invest some research and development talent in their investigation.

The firm decided that all of its initial work—regardless of the end-use anticipated—would be pointed towards the development of one-component systems, so that the potential users could be offered a definite advantage right off the bat.

Schenectady used the epoxides for Electrical Components:

- (1) Encapsulated by vacuum impregnation with a diepoxide-based, 100% solids, liquid compound.
- (2) Coated with a powdered diepoxide-based compound, using the fluidized-bed technique; and

Surface Coatings:

- (1) Marine spar varnish
- (2) Linoleum finishing varnish
- (3) Wall tile for interior or exterior use.

Morehouse-Cowles Develops Variable Speed Dissolvers

New, variable-speed dissolvers, designed for mounting on fixed tanks and applicable to a wide variety of mixing problems, are announced by Morehouse-Cowles, Inc.

The variable-speed drive mechanism is capable of delivering 90% of motor horsepower to the impeller even at lowest speeds, regardless of changes in material or viscosity. Speeds may be easily changed without stopping the machine.

Ranging up to 40 horsepower in size, these high-speed, high-shear, impeller-type mixers may be mounted on almost any stationary tank anywhere.

Applications include general mixing operations, dissolving, emulsifying and de-agglomerating. Materials which may be processed include solid-liquid, liquid-liquid and gas-in-liquid formulations.



**"CSC WAS ABSOLUTELY RIGHT!
2-NP IS THE SOLVENT
FOR ACRYLICS"**

There is no other solvent for acrylic coatings like CSC's 2-Nitropropane. It possesses the properties that eliminate many of the undesirable shortcomings presently encountered with other acrylic solvents. No offense intended to our competition but the facts support the claim. Here they are:

2-NP has an ideal evaporation rate for spray application. It's greatly superior to MIBK with an evaporation rate of 110 versus 186!

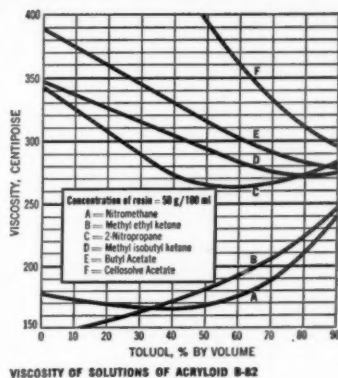
2-NP reduces cobwebbing and overspray. Solutions have good film-forming properties and gloss.

2-NP is comparable to MEK and superior to MIBK, n-Butyl acetate and "Cello-solve" acetate in cutting time.

2-NP, with aromatics, gives lower solution viscosities than most commonly used solvents.

The chart shows the excellent solvency characteristics of 2-NP-Toluol blends for the resin B-82.

2-NP is your best solvent buy for Acrylics ... Technical Bulletin No. 8 proves it! Write for your free copy—mail coupon today.



INDUSTRIAL CHEMICALS DEPARTMENT

COMMERCIAL SOLVENTS CORPORATION

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C I B A

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Fighting corrosion is a billion dollar business, and epoxy resin-based coatings are setting the pace. Here is a booming market for coating formulators. Protecting essential equipment with CIBA Epoxy Resin-based finishes has proved a sure-fire way to cut maintenance costs. For these corrosion-proof applications CIBA offers a broad range of epoxy products coupled with market-oriented technical service facilities aimed at satisfying every customer need. Investigate CIBA, the dependable source for epoxy resins.

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Araldite® Resins for Anti-Corrosion Uses

equipment finishes
marine finishes
masonry finishes
structural steel coatings
tank coatings
pipe & tank linings

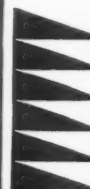
502

6084*

7071

7072

7097



*Used primarily in conjunction with fatty acids to produce esters.

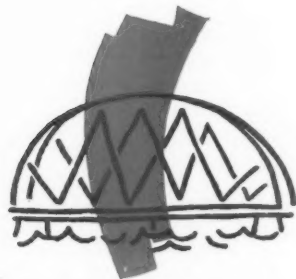
Whether you make Alkyds for:



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OR BAKED FINISHES...



Specify PITTSBURGH Intermediates for Top Quality Finishes with Maximum Customer Appeal

If you make alkyd resins or finishes, it will pay you to specify high purity phthalic anhydride, maleic anhydride and fumaric acid from *one* dependable source—Pittsburgh Chemical.

Pittsburgh quality-controlled intermediates make it a lot easier to consistently produce finishes with superior color and gloss retention, ease of application, durability and fast drying.

Pittsburgh Phthalic maintains good molten color stability over long periods and requires no special alloy steels for handling. It is essentially free of maleic anhydride and benzoic acid, thus insuring uniform reaction rates and reduced product variations.

PITTSBURGH CHEMICALS FOR THE PAINT INDUSTRY

Phthalic Anhydride • Maleic Anhydride • Fumaric Acid
Benzol • Toluol • Xylol • DiButyl Phthalate • Phthalocyanines

The next time you need intermediates, order from Pittsburgh Chemical. You'll save money in paper work and reduce freight costs by ordering mixed carload shipments. And you'll *like* doing business with *one* efficient, coordinated sales and service team, familiar with your operations and requirements. *Call Pittsburgh Chemical today!*



INDUSTRIAL CHEMICALS DIVISION

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9212

Get the properties you want most
in your formulations with...

AZO lead-free ZINC OXIDES

the paint industry's most versatile line

GRADE (Lead-free)	BULK DENSITY lbs./cu. ft.		PARTICLE SHAPE	PARTICLE SIZE	OIL ABSORPTION (Rub Out Method)	FOR PAINT CONSISTENCY (Rated High to Low)
	Conventional	AZODOX*				
AZO-22	20	35	Acicular	Long	21	5
AZO-11	23	40	Acicular	Medium	18	4
AZO-33	27	46	Acicular	Short	16	3
AZO-55	32	60	Nodular	Small	14	2
AZO-55-LO	36	65	Nodular	Medium	12	1
AZO-66 (French)	28	—	Nodular	Fine	12	—
AZO-77 (French)	24	—	Nodular	Fine	12	—

No need to compromise on the properties you want in your paint and enamel formulations. Set your specifications—then from the complete AZO line of lead-free zinc oxides choose the particular grade to meet your exact requirements. American Zinc is the only producer of acicular lead-free zinc oxides covering the full range of oil absorptions from high to low—including the intermediate ranges—in both conventional and Azodox forms.

In your formulations, AZO lead-free zinc oxides increase hiding power, film strength and tint retention... control chalking, inhibit mildew growth. Controlled refining of AZO zinc oxides removes objectionable fine particles, increases brightness and insures uniform consistency. WRITE FOR COMPLETE INFORMATION.

*AZODOX is American Zinc's de-aerated form of zinc oxide, with high apparent density. All other physical properties remain unchanged. Faster handling, less storage space, quicker mixing.

American Zinc also produces a wide line of leaded zinc oxides for general use in exterior house paints.

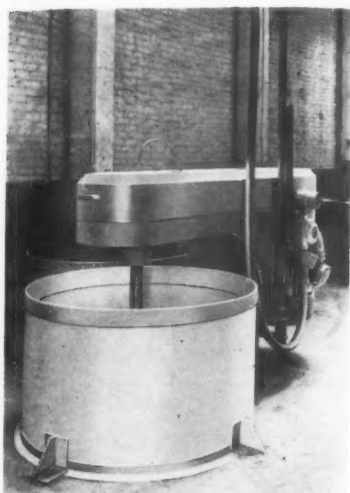


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NEW EQUIPMENT AND MATERIALS

This section is intended to keep our readers informed of new materials and equipment. While every effort is made to include only reputable products, their presence here does not constitute an official endorsement.



MOREHOUSE-COWLES

DISSOLVER Space-Saving

New dissolvers, specially designed for "through-the-floor" operation to save valuable space have just been announced.

The new models may be mounted on upper floors, walkways, balconies, or other locations which permit the impeller to operate in tanks installed below floor levels. Production can be piped direct to lower areas for further processing or packaging, since many products can be completed on the dissolver without the necessity for milling.

They are designed to help in conservation of space under certain conditions, use of gravity transference of materials instead of by pumping, and simplification of processing arrangements.

Available in 40 to 75 H.P. sizes, they are equipped with hydraulic lifts and "MPD" (maximum power delivery) drive systems. Hydraulic lift mechanism is constructed to

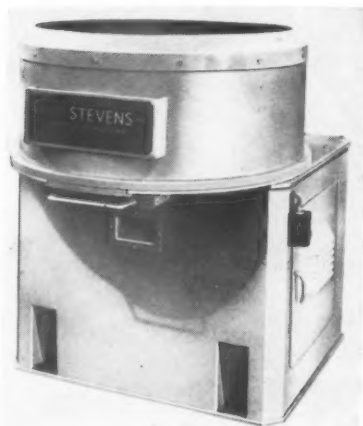
allow cylinder to operate through the floor, providing 66" rise of the mixing mechanism, to clear tanks.

Drive system is capable of delivering over 90% of motor horsepower to impeller, even at slowest speeds. Speeds may be changed any time without stopping. Impeller can be swung in a 270° arc, allowing use of multiple tanks to speed operations.

Morehouse-Cowles, Inc., Dept. PVP, 1150 San Fernando Rd., Los Angeles 65, Calif.

MULLER 400-Pound Capacity

New muller is designed for batch mixing of a wide variety of dry and semi-dry products such as paint pigments, foundry sands, chemicals,



STEVENS

food stuffs, fertilizers, ceramics, plastics, grains and feeds, and similar materials. It has a rated capacity of up to 400 pounds and in the months of field testing to which it has been subjected has more than proved its ability to do a fast job of mulling.

Other features cited by the company of the new muller are:

- (1) A low silhouette—it stands only four feet high and is easy to load;
- (2) It is compact—occupies only

seven square feet of floor space;

- (3) It is fast—mixes a 400 pound load in less than 1 minute, discharges as fast as an operator can handle;
- (4) It is rugged—solidly constructed of heavy duty materials for a long lifetime;
- (5) It is maintenance free—simplicity of design eliminates maintenance problems.

Frederic B. Stevens, Inc., Dept. PVP, 18th St., Detroit 16, Mich.

HAND TRUCKS Lightweight

New line of low-cost hand trucks, constructed of lightweight tubular steel, was announced. The two-wheeled trucks are designed for increased versatility in handling heavy goods, and are said to be ideal for small retail operations and light delivery trucks.

Called the "Kase-King," the new line offers models weighing from 18 to 28 pounds. Four of its five models feature removable semi-pneumatic and cushion tread wheels of different sizes which can be



AMERICAN PULLEY

changed quickly to adapt to on-the-job situations. Wheel sizes are available in diameters of six, eight and ten inches. Three axle posi-

NEW MATERIALS — EQUIPMENT

tions on the trucks make possible the quick-change operation.

Kase-King's heavy duty skid bars are reinforced at points of stress and will facilitate stair and curb climbing. With a capacity of 400-pounds and tipped-top bar handle, Model KP is the basic unit of the line. Models KP-1 and KP-2 offer the same features—with single pistol-grip handle and two bent-handle grips, respectively.

Model KP-0, or open frame model is made without cross-bars and center strap. Its low cost and light weight makes it especially applicable for beverage case handling.

The utility truck model is the lightest and lowest in cost of the Kase-King line. Fitted with standard five-inch solid rubber wheels, it has a 200-pound capacity and is suitable for moving goods over single-level areas.

All frames are double-dipped in red enamel to protect the metal against rust and hard use.

American Pulley Co., Dept. PVP, 4200 Wissahickon Ave., Philadelphia 29, Pa.

METHYL ISOAMYL KETONE

High Dilution Ratio

Methyl isoamyl ketone is now available in commercial quantities. Methyl isoamyl ketone reportedly represents the most economical, high-boiling solvent (145.4°C.) for vinyl and nitrocellulose lacquers.

Its higher dilution ratio as compared with the other high-boiling solvents being used in these applications also provides added savings in formulating costs. Methyl isoamyl ketone contributes lower viscosities, has a high relative evaporation rate, and offers excellent blush resistance.

Union Carbide Chemicals Co., Dept. PVP, 30 East 42nd St., New York 17, N. Y.

PRECIPITATED SILICAS

Low Acidity

Commercial manufacture of micro fine precipitated silicas under the trade name of "Quso," has been announced.

The silica used as flattening agent for nitrocellulose lacquers is designed as "Quso F 20." It is a soft

micro fine product with an ultimate particle size from 9-15 microns. This micro fine precipitated silica is slightly acid (pH 6.4). Low acidity is valuable in preventing degradation of ingredients of a lacquer.

According to the company, the features of Quso F 20 are high flattening efficiency, excellent suspension characteristics, good resistance to overgrinding. When Quso F 20 is used in nitrocellulose lacquers at any gloss level, the films are smooth and transparent with a warm "rubber effect" appearance combined with a sleek feel.

A similar product, Quso G 30,

because of its alkaline nature (pH 8.2) is applicable in other types of finishes.

These products are available in multiwall moisture resistant paper bags of 25 lbs. net. Prices range from 55 cents per pound for minimum lots of 10,000 lbs., to 70 cents per pound for lots of 200-575 lbs.

Philadelphia Quartz Co., Dept. PVP, Public Ledger Building, Independence Square, Philadelphia 6, Pa.

LATEX PAINT BINDER Packaging Stability

Latex X-3339 is offered for the improvement of interior latex paint. According to the manufacturer, the

Using rosin esters? Consider PANAREZ Resins as a replacement



Using P...
gum in...
tions b...
One is...
PANARE...
rived—...
supply...
You als...
quality...
vert to P...
get (1)...
sistance...
chemica...
If you...
varnish...
or chlo...
coatings...
Resins...
represen...

AMC
CHEMICAL

PAINT

NEW MATERIALS — EQUIPMENT

new latex does not require thickener-stabilizer. The ability to use highly efficient synthetic thickeners carries with it added advantages such as minimum bacterial protection and excellent packaging stability. According to the firm, the new latex means simplified formulations because large amounts of preservatives and stabilizers are unnecessary.

Dow Chemical Co., Dept. PVP, Midland, Mich.

SURFACE COATING RESIN Mar-Resistant

New surface coating resin of extraordinary versatility has been developed. The company is now making available commercially CYZAC 1016, a new product formulated for use with alkyds to provide exceptional impact resistance, hardness and mar-resistance to baked enamels while permitting them to retain a high degree of flexibility.

Besides this unusual combination of features, CYZAC 1016 is also $1\frac{1}{2}$ times more effective than melamine resins in alkyd/amino systems. This permits paint manufacturers

greater latitude in formulation, hence more economical use of materials, since one pound of CYZAC 1016 can replace $1\frac{1}{2}$ pounds of melamine resin. The low viscosity of CYZAC 1016 has little effect on the final viscosity of the finished enamel.

American Cyanamid Co., Plastics and Resins Div., Dept. PVP, 30 Rockefeller Plaza, New York 20, N. Y.

LABORATORY OVEN Automatic Controls

New design achieves dependable heat control accuracy up to 550° F. in a low cost electric laboratory oven.

The Model 203-6 oven is built to accommodate many heat applications in the low heat range. It is built to use minimum floor space. Only 27" x 22" on small models constructed so that ovens can be stacked one upon another, to achieve more than one heat simultaneously in limited laboratory space.

The oven is equipped with automatic control. It requires minimum attention. High velocity fan diffuses heated air evenly and completely through the work chamber to maintain high heat uniformity in the chamber. Circuit breaker protects motor from possible damage. Complete insulation reduces heat loss to minimum and asbestos gasket seals door and oven to make the 203-6 a reliable oven for heat testing and such other uses as sterilizing, drying and curing, and aging processes, also for preheating plastic materials.

This ruggedly built oven is finished in practical baked gray enamel. Strong steel strap hinges support a sturdy door. A steel control box protects controls from dirt and damage. Ovens have hinged handles on both sides for convenience when moving oven. Heating system located at bottom of oven is low gradient type open coil. 1500 watts, either 110 volts 1/60 AC or 220 volts 1/60 AC. Heat up time from room temperature to 550° only 45 minutes with empty chamber.

Despatch Oven Co., Dept. PVP, 619 S. E. Eighth St., Minneapolis 14, Minn.

Using PANAREZ Resins to replace ester gum in your surface coating formulations brings you important benefits. One is an assured source of supply. PANAREZ Resins are petroleum derived—supply is unlimited. An assured supply promises greater price stability.

You also get the benefit of product quality improvements when you convert to PANAREZ Resins. Specifically you get (1) superior water and alkali resistance, (2) better drying, (3) improved chemical resistance.

If you manufacture oleoresinous varnishes, modified phenolics, alkyds or chlorinated rubber-based surface coatings, get the facts on PANAREZ Resins from your Amoco Chemicals representative.



AMOCO CHEMICALS CORPORATION
910 South Michigan Avenue
Chicago 80, Illinois



NEW MATERIALS — EQUIPMENT

1,4-DIOXANE Wetting Agent

Availability of the solvent 1,4-dioxane, which has many applications in the paint industry, was announced.

The solvent will be available in 55-gallon drum and tank-car quantities at a delivered price from the firm's plant in Freeport, Texas. Until now, it has produced 1,4-dioxane only for its own use.

A cyclic ether, the chemical is used as a stabilizer for chlorinated solvents and as a solvent for cellulosic plastics, natural resins, mineral oils and vegetable oils. It also

is an ingredient in solvents for the removal of paint, varnish and lacquer.

The textile industry uses 1,4-dioxane as a wetting and dispersing agent, as a dyeing aid and as an extraction agent. Dow said the product also has shown potential utility as a spinning agent for acetate fiber.

Soluble in water and a wide range of organic solvents, 1,4-dioxane is little affected by acids, alkalis and mild oxidizing agents.

Dow Chemical Co., Dept. PVP, Midland, Mich.

THICKENER Free Flowing

New thickener, Modicol VI, is used for natural and synthetic latices used in coating and ad-

hesive applications. It is a modified ammonium polyacrylate and, is said to offer the user the following advantages: Excellent color and clarity, high viscosities at low concentrations, Free flowing, and does not yellow or embrittle.

When used in latex paint it thickens the formula, aids in pigment suspension and contributes to better brushability. In latex adhesive preparations and dip coating applications it thickens the formula and yields a smooth homogeneous product having good film-foaming characteristics. Storage stability of the adhesive is improved and the danger of coagulation under mechanical stress is minimized.

Protective Coatings Dept., Nopco Chemical Co., Dept. PVP, 60 Park Place, Newark, N. J.

PUMP

Water Cooling Jackets

New sealless "canned" pump with an externally mounted heat exchanger for high temperature operation has been announced.

In addition to the heat exchanger, the new high temperature models are equipped with water cooling jackets around the motor section for maximum cooling. All advantages of "canned" construction are retained. Pump and motor are one unit, and a portion of the pumped fluid circulates through the motor section between the rotor and stator both of which are "canned" in corrosion-proof, non-magnetic liners. In the new high temperature models, the pumped fluid is circulated continuously through the heat exchanger and the motor section, the pumped fluid acting as motor coolant and bearing lubricant. Since pump and motor are one unit, there are no stuffing boxes or seals and leakage is completely eliminated. This is especially advantageous when handling corrosive, toxic, inflammable, explosive, radioactive, or expensive liquids.

Chempump Div., Fostoria Corp., Dept. PVP-60, Huntingdon Valley, Pa.

RESIN

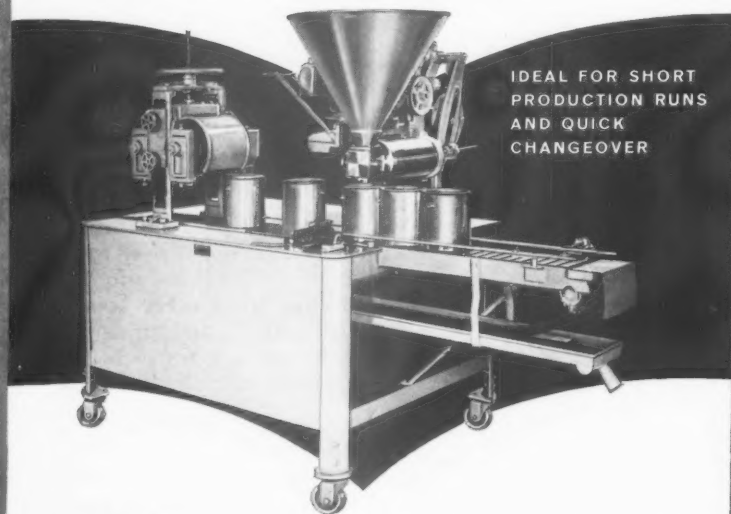
Low-Cost Formulations

New resin makes lower cost multi-color paint formulations possible, according to the manufacturer. The new multi-color formulation re-



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Paint Filler and Power Roller Capper



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AND QUICK
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- Explosion proof motor



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SPECIALISTS IN PRECISION PACKAGING EQUIPMENT FOR MORE THAN 60 YEARS

NEW MATERIALS — EQUIPMENT

portedly sprays easily, wears well, and has good adhesion, especially when used over a concrete substratum. Individual pigment particles retain color identity both in storage and upon application, the firm said.

According to the company, X-37 Resin, replacing the more expensive Vinyl Toluene-Butadiene Copolymer Resin in a base formulation, cuts vehicle raw material costs yet maintains satisfactory performance.

Velsicol Chemical Corp., Dept. PVP, 330 E. Grand Ave., Chicago 11, Ill.

PAINT FILLER

Small Batch Packaging

New single-operator Model "R" paint filler and power roller capper is specifically designed for small batch paint packaging.

Low in initial cost and in operating cost, the Model "R" is precision engineered for accurate filling and capping of all paints, enamels and lacquers in sizes ranging from one thirty-second to and including gallons.

Plants with short production runs or quick changeover requirements will find this new machine particularly adaptable. On a continuously moving platform conveyor, cans are automatically centered under the filling nozzle and on completion of the fill are automatically released by a cam controlled stop finger. The operator puts the cover in place and the filled can and cover enter the first of two power driven rollers. The first roller, slightly higher than the second, starts the cover and expels excess air. The second roller drives the cover home without the possibility of bulging cans.

Easy to clean, the machine is equipped with an explosion proof motor, variable speed drive and fine fill adjustment which permits fine adjustment of the fill even while the machine is in motion.

Elgin Manufacturing Co., Dept. PVP, 200 Brook St., Elgin, Ill.

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Corrosion-Resistant

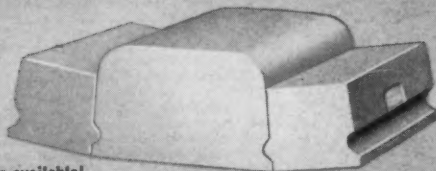
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NEW MATERIALS — EQUIPMENT

inhibitor for liquid shellac has been announced. The action of Can-Gard is said to be twofold. It prevents can corrosion and the slow drying which normally develops rapidly. Shellac which has been stored for as little as four months under very warm conditions may cause cans to corrode. The resulting iron contamination will blacken oak floors. Slow drying and formulation instability are common complaints.

The elimination of shellac instability benefits the consumer,

dealer, industrial formulator and the manufacturer.

Acme Shellac Products Co., Dept. PVP, Newark, N. J.

DRUM HEATER Grounded for Safety

New flexible electric drum heater for heating viscous materials and simplifying their removal has been introduced. The heaters, designed to fit any diameter steel drum from 21½" to 23½", are ideal for users of paints, oils, fats, adhesives and chemicals. The units are flexible and can be wrapped around the drum and easily attached with a simple spring attachment. Once in position, the devices will heat the drum and its contents to any de-

sired temperature to permit easy and economical removal of the contents or maintain even temperatures when required.

The heaters are made from fully vulcanized silicone rubber, fibre glass, cloth and metal screen laminate, and are highly resistant to mechanical damage. Their flexibility permits snug wrapping of the drums even when both drum ends are restricted.

Heaters are grounded for safety. Each unit is equipped with a 6-foot cord set with grounding cap. The surface is protected electrically by the electrically grounded metal screen.

The units are factory tested at 1250 volts dielectric strength and are rated 1000 watts at 115 volts. Special sizes are available on request.

Electro-Flex Heat, Inc., Dept. PVP, 83 Woodbine St., Hartford 6, Conn.

ALIPHATIC CHEMICALS

Tertiary Amines

A new group of aliphatic chemicals called "Propomeens" has been developed by the Armour Industrial Chemical Co.

The chemicals are suggested for research and development in applications requiring oil soluble amines and cationic surface activity. It is also expected the Propomeens will be useful as dispersants in hydrocarbon systems, defoamers in acid systems and as oil additives.

Armour Industrial Chemical Co., Dept. PVP, 110 North Wacker Dr., Chicago 6, Ill.

LABEL PRINTER

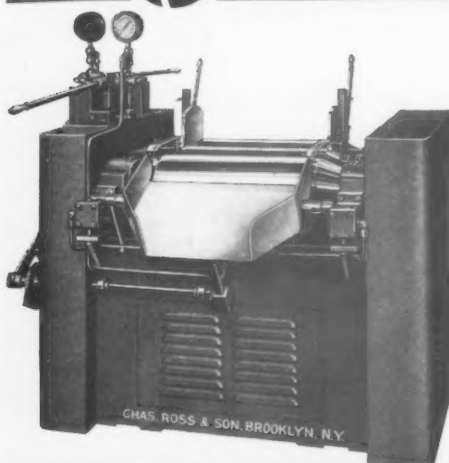
Quick Plate Changing

A small, inexpensive label printer and die cutter for factory and office use is being offered.

The machine prints and die cuts in one operation on pressure sensitive, gummed, heat seal or tag stock, as well as foil and fabric. The rubber printing plate is set inside a rotary die, giving exact registration. Change of plates and colors is said to be quickly effected. The machine has given considerable savings to manufacturers for short and long runs of labels.

The Paxon Co., Dept. PVP, 1265 Broadway, New York 1, N. Y.

NEW Ross HIGH SPEED THREE ROLL MILLS WITH— ONE POINT HYDRAULIC ROLL ADJUSTMENT



1 Pressure indicating gauges provide greater ease in properly setting rolls, and less skill or experience is required by operator.

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4 Mills have quick roll release with safety overload feature, and are convertible for either fixed or floating center roll operation. 2½x5, 4½x10, 6x14, 9x24, 12x30, 14x32, and 16x40" sizes.

PRODUCTION SIZE DISPERSION TYPE CHANGE CAN MIXERS WITH— DOUBLE PLANETARY STIRRER ACTION



●Stirrers with special blade angles and very close clearances revolve on their own axis and also around can developing 12 intense compressive and shearing actions with each revolution to break down and disperse agglomerates.

●Variable speed for infinite range of stirrer speed control.

●Simplified vertical hydraulic lift for greatest ease in cleaning down stirrers.

●Non-revolving can is completely enclosed during mixing for safety and to reduce solvent loss. Cans can be jacketed or fitted with slide gate when required. Cans are easily positioned or removed from Mixer.

●Extra heavy construction and standard type motor eliminate costly downtime. Oversized motor drives can be provided for kneading and mixing extremely heavy materials. 1, 2, 3, 4, 6, 8, 12, 25, 50, 65, 85, 125 and 150 gallon sizes.

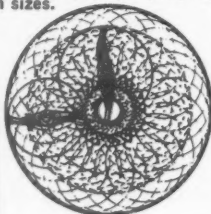
Area of can contacted by stirrers during only one revolution of stirrers around can (2 seconds). Position of stirrers advances 4½° with each successive revolution to sweep entire area and all points on sides of can. Stirrers overlap each other as well as center of can.

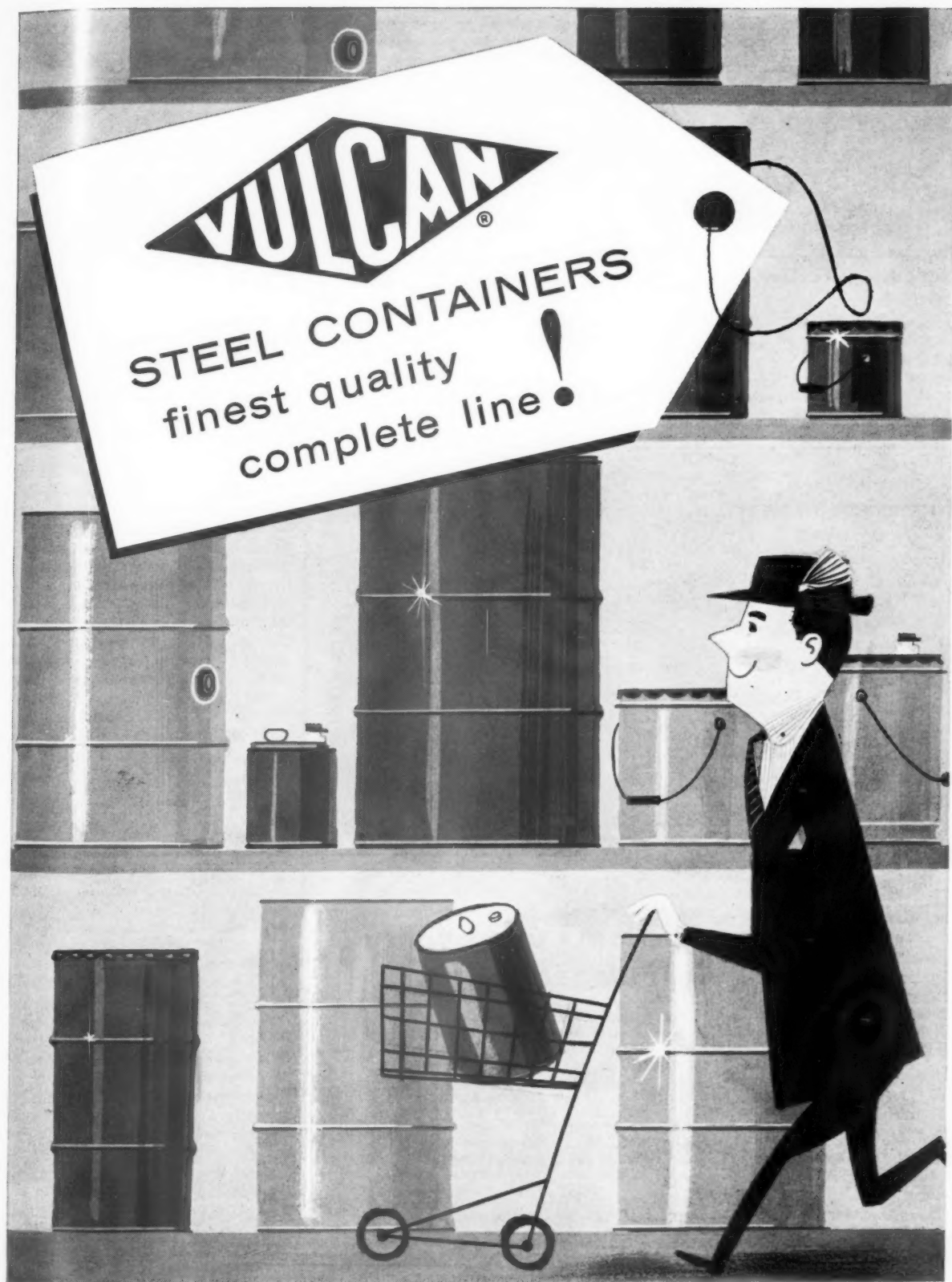
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VULCAN CONTAINERS INC., Bellwood, Illinois, Phone: Linden 4-5000 / (DDD-312), TWX: BWD 2375 PVP-90

PATENTS

Complete copies of any patents or trade-mark registration reported below may be obtained by sending 50c for each copy desired (to foreign countries \$1.00 per copy) to the publisher.

Stabilization of Chlorinated Solvents

U. S. Patent 2,944,088. Otto S. Kauder, Jamaica, N. Y., assignor to Argus Chemical Corp., a corp. of N. Y.

A stabilized chlorinated aliphatic solvent having a boiling point below 130° C. containing per 100 g. solvent 0.01 to

2 g. of a condensation product of an aldehyde of the group consisting of formaldehyde and acetaldehyde with a primary amine containing 1-3 carbon atoms.

Resinous Coating Composition

U. S. Patent 2,940,943. Roger M. Christenson and Henry A. Vogel, Richland Township, Allegheny County, Pa., assignors to Pittsburgh Plate Glass Co., Allegheny County, Pa., a Corp. of Pennsylvania.

A resinous composition comprising a blend of nitrocellulose and an interpolymers of an amide selected from the group consisting of acrylamide, methacrylamide and itaconic diamide, and at least one other monomer containing a $>C=CH_2$ group, said interpolymers containing from about 5 to 45 percent by weight of said amide in polymerized

form based on the total weight of said interpolymers and being characterized by having at least one hydrogen atom of an amido nitrogen replaced by the structure R

-CHOR,

wherein R is a member selected from the group consisting of hydrogen, furyl and lower alkyl and R₁ is a member selected from the group consisting of hydrogen, lower alkyl and butoxyethyl, said nitrocellulose and said interpolymers being present in the relative percentages by weight of from 10 to 50% nitrocellulose and 80 to 50% of said interpolymers.

Improving the Color of Petroleum Resins

U. S. Patent 2,946,775. Arthur Douwe de Vries & Fred J. Buchmann, Baton Rouge, La., assignors to Esso Research & Engineering Co., a corp. of Dela.

A process for preparing resins of improved color which comprises isolating a steam-cracked petroleum fraction boiling between about 20 and 175° C., heating the steam-cracked fraction to a temperature sufficient to dimerize substantially all of the cyclodienes in said fraction, stripping the resulting mixture to separate an overhead product from the dimerized cyclodienes, fractionating the overhead product to separate at least 50% of the product boiling up to 38° C., including isoprene, recovering a product stream boiling between about 20 and 170° C. and having the following composition:

Composition:	Weight percent
Olefins	68-30
Diolfins	8-20
Paraffins and naphthenes. . . .	5-1
Aromatics	19-49

drying said product stream to reduce its water content to less than 130 p.p.m., polymerizing said dried product stream by contacting it with 0.2 to 0.4 wt. percent aluminum chloride catalyst at a temperature between -40 and 70° C., and recovering a light colored resin.

Wax Composition

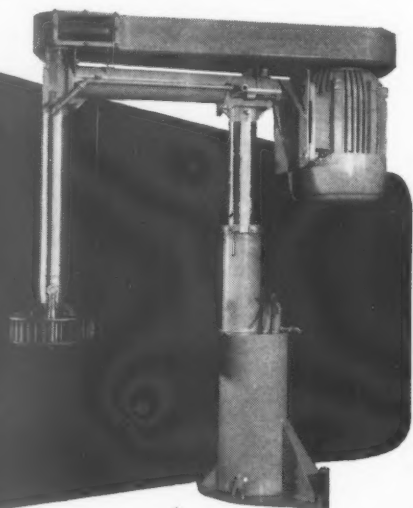
U. S. Patent 2,943,991. John D. Tench, Prospect Park, & Irl N. Duling, Newtown Square, Pa., assignors to Sun Oil Co., Philadelphia, Pa., a corp. of N. J.

A wax composition consisting essentially of from 45% to 54% of a paraffin wax having a melting point of from 131°F. to 136°F., a penetration at 77° F. of from 10 to 16, and a viscosity at 210° F. of from 35 to 41 SUS, and from 45% to 54% of a paraffin wax having a melting point of from 148° F. to 156° F., a penetration at 77°F. of from 9 to 15, and a viscosity at 210°F. of from 40 to 46 SUS, and from 1% to 2% of a microcrystalline wax having a melting point of from 190°F. to 196°F., a penetration at 77°F. of from 3 to 8 and a viscosity at 210°F. of from 80 to 90 SUS.

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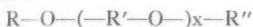
Kinetic Dispersion corp.

95 Botsford Place Buffalo, N. Y.

Polyoxide Coating

U. S. Patent 2,943,955. Harold C. Brill, Wilmington, Del., assignor to E. I. du Pont de Nemours & Co., Wilmington, Del., a corp. of Dela.

An adhesion-promoting composition consisting essentially of an alkyl titanate having up to 8 carbon atoms per alkyl group, a volatile inert organic solvent for said alkyl titanate, and at least one hydrolysis modifier for said alkyl titanate selected from the group consisting of normally solid hydrocarbons; normally solid, chlorinated hydrocarbons; mono-hydroxy alcohols having 9-31 carbon atoms and the titanates of said mono-hydroxy alcohols; compounds of the structure



wherein R and R' are hydrocarbons and R'' is hydrocarbon or hydrogen and x represents integers from 1 to 10 when R and R' are aliphatic and R'' is aliphatic or hydrogen and x is zero or one when at least one of the R and R'' groups is aromatic; and tertiary amines which are both water soluble and organo soluble, the combined concentration of the alkyl titanate and the hydrolysis modifier being up to about 2% by weight of the adhesion-promoting composition and the hydrolysis modifier being present in a minor amount by weight with respect to the alkyl titanate.

A process for preparing the surface of a solid for the subsequent application of an adhesive material comprising applying a thin film of the composition of claim I to said surface, exposing the resulting film to an atmosphere containing water vapor at temperatures ranging from room to 300° C. until volatile solvents present become substantially evaporated and hydrolysis and polymerization of said titanate takes place to form an adherent polyoxide coating on said surface.

Modified Polymeric Titanium Oxide Films

U. S. Patent 2,941,903. Anthony Winston, Manor Township, Lancaster County, Pa., assignor to Armstrong Cork Co., Lancaster Pa., a Corp. of Pennsylvania.

The method of coating a solid surface with an insoluble, flexible, adherent film comprising a polymeric oxide, which method comprises applying to said surface a layer of hydrolyzable organic ester titanium atom and contacting the applied ester layer while having present therein no more than a minor amount of a volatile solvent for said ester with vapor of a hydroxyl aromatic compound selected from the group consisting of hydroxyl benzenes and hydroxyl naphthalenes until substantial polymerization of said ester on said surface is effected.

Fire Retardant Composition

U. S. Patent 2,940,942. Olaus T. Hodnefield, Montrose, Calif., assignor of fifty percent to Kay O. Anderson.

A fire retardant composition including body-forming material comprising a gilsonite having a melting point between about 270 degrees F. and about 200 degrees F. containing a substantial proportion of heavy gilsonitic oils and a substantial proportion of mineral-free bitumen and about 50 to 125 parts of a finely divided inert fire retardant mineral filler per 100 parts of gilsonite distributed throughout the body-forming material in a state of uniform, fine dispersion; said composition also containing a very minor proportion of a fatty acid soap to maintain said state of fine dispersion.

Method for Imparting Color to Cedarwood

U. S. Patent 2,940,811. Eduard Farber, Washington, D. C., assignor, by mesne assignments, to Great Western Producers, Inc., Gulf Red Cedar Company Division, New York, N. Y., a Corp. of Maryland.

The process for imparting a reddish coloration satisfactory for pencil manufacture to cedarwood slats which comprises, contacting said cedarwood with an aqueous solution containing from about 1% to about 6% by weight of an alkali metal nitrite under conditions to effect absorption by said wood of from about 0.03% to about 5.0% by weight of said nitrite and thereafter gradually removing water from the nitrite-containing wood over a time period of at least about 12 hours to produce a colored cedarwood product containing not more than about 10% water.



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Model M. 10 HP variable speed DiscPerser. Works with various size containers. For larger batch, heavy duty work, use Model H DiscPerser with 20 HP to 40 HP drives.



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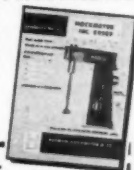
The new HOCKMEYER DiscPerser ... produces very rapid ultimate dispersion...handles high-viscosity materials!

The DiscPerser's special blade operates at peripheral speeds in excess of 6000 FPM. The solid impeller teeth shred and break up pigment agglomerates. Material is discharged through the slots between the rings, at great speed and under intense hydraulic pressure. Tremendous fluid hammer action is developed by the smashing of material against the surfaces of these deflected outside rings. Material leaves the blade in thin, high-speed jet streams. Impact on the slower moving surrounding material creates further attrition and speeds the breakdown to original pigment particle size.

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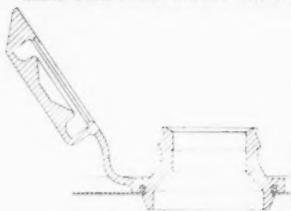
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CONTINENTAL'S NEW ALL-PURPOSE FLIP CAP*

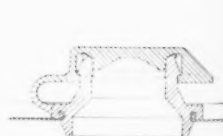
Continental presents new packaging beauty with economy and convenience, too... Flip Cap* can, with dripless pour spout, is perfect for practically all liquids and granulated products now packaged in round or oblong nozzle-type cans.

Continental's new plastic Flip Cap is permanently hinged to its dripless pour spout—snaps back and stays open, snaps shut and stays shut. Inserted into the top of the can *after* filling, Flip Cap permits higher filling speeds through a larger opening. And the top of the

container can be fully lithographed—no solder splashes, no flux spots or heat scorching. For the full story, ASK THE MAN FROM CONTINENTAL!



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*Patents pending



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Department PV-9

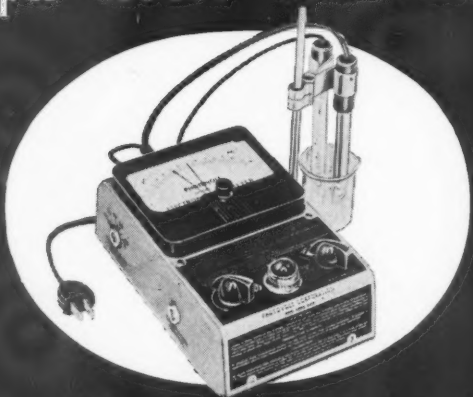
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TECHNICAL Bulletins

POLYURETHANE LACQUERS

New bulletin has been published on the use of cellulose acetate butyrate in polyurethane lacquers.

Polyurethane coatings are characterized by their outstanding flexibility, hardness, abrasion resistance, and chemical resistance. In applications where these properties are of great importance, polyurethane coatings are showing considerable commercial success.

Bodging and flow control agents are added to polyurethane systems because of the low viscosity and tendency to fisheye, crater, and sag shown by these systems. Addition of cellulose acetate butyrate esters has been suggested by suppliers 1, 2 of polyurethane raw materials to promote bodging, aid in flow control and improve the viscosity of these polyurethane lacquers.

The personnel of the customer service laboratories of the firm have investigated the use of various additives as flow control agents in polyurethane coating systems. Evaluated in this study were:

1. Cellulose acetate propionate, EAP-482-20³
(Development product)
2. Cellulose acetate butyrate, EAB-381-20³
3. Cellulose acetate butyrate, EAB-381-2³
4. Cellulose acetate butyrate, EAB-500-5³
5. Nonionic surfactant
6. Polyvinyl butyral
7. Polyvinyl acetate

The results of this study showed that EAP-482-20 and EAB-381-20 were completely compatible with the polyurethane coatings and improved the flow-out properties to a greater extent than did any of the other flow control agents tested. EAB-381-2 was found to give results intermediate to those obtained with EAB-381-20 and EAB-500-5. (EAB-171-2 and EAB-272-3 had poor solubility in the solvents ordinarily used in polyurethane lacquers and were not evaluated.)

The solubilities of the four Eastman cellulose esters—EAP-482-20, EAB-381-20, EAB-381-2, and EAB-500-5 in 2-ethoxyethyl acetate and xylene are shown in ternary charts 1.

Eastman Chemical Products, Inc., Dept. PVP, Kingsport, Tenn.

URETHANE COATINGS

A series of twelve clear urethane coatings are described in a newly released information file. The coatings are recommended for wherever varnishes or lacquers have previously been used as finishes or protective coatings. Claimed to provide finishes with greater resistance to scratching and wear, weathering and chemical atmospheres, the coatings are described and a chart

provides general, physical, chemical and mechanical properties for each of the twelve related numbers. Described as a balanced series, the chart shows the twelve numbers in four basic classes of formulations. Suggested applications include use as finishes for wood floors, as marine finishes, as finishes for sporting goods, for use as protective coatings on bobbins, shuttles and other textile mill parts, as protective coatings and finishes for furniture, on the handles of tools, cutlery, paint brushes, etc. Maintenance uses include protective coatings for filter plates, wooden tanks, agitator blades, and as wood sealers to obtain improved layout for conventional paints. They are recommended wherever chemical resist-

"Have you noticed how coatings containing Emersol® 9315 Liquid Fatty Acid have a fast air dry with almost no after-yellowing?"

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"Well, if Emersol 9315 has such a high I.V., then it's . . ."

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Emery INDUSTRIES, INC.
Fatty Acid Sales Department
Dept. X-9 Carew Tower, Cincinnati 2, Ohio

For complete specifications on Emersol 9315 and all of Emery's complete line of fatty acids, write for the Emeryfacts booklet titled, "Specifications and Characteristics of Fatty Acids."

ance on equipment or building surfaces is desired, particularly in chemical industries. Some of the formulations described are flexible and, the maker claims, have high adhesion for rubbers and other synthetic products, such as conveyor belts, hose and automotive products.

B. B. Chemical Co., Dept. PVP, Cambridge, Mass.

EMULSION POLISHES

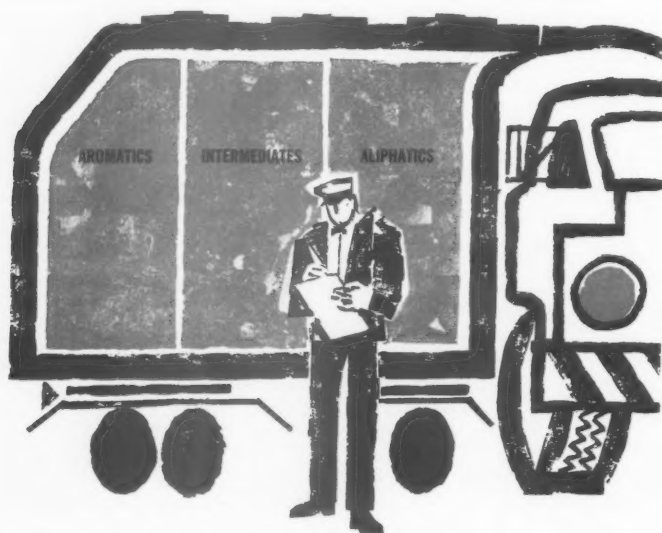
"Resins for Emulsion Polishes" is the title of a new illustrated booklet which has just been published.

The alkali-soluble resins and the wax-compatible terphenols offered by the company for use in both wax- and polymer-based emulsion polishes are described briefly,

and their specifications tabulated. The remainder of this 20-page booklet is devoted to suggested formulations, preparation techniques, polish evaluations, and test methods. Included are formulations incorporating all of the natural and synthetic waxes commonly used in emulsion polishes as well as formulations based on use of the newer styrene and acrylic polymers as partial or major replacements for waxes. Both dry-bright and buffable formulations are covered.

A general guide to techniques and ingredients that can be used to accent various properties of a formulation adds to the usefulness of the booklet.

Schenectady Varnish Co., Inc., Dept. PVP, Schenectady, N. Y.



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PROCESS EQUIPMENT

New bulletin on processing and heat transfer equipment contains product description and specifications on the complete line of laboratory and production blenders, vacuum tumble dryers, packaged pilot plants, and process heat exchangers.

The new 20-page bulletin also describes the organization and operation of the company's pre-test laboratory which tests customer formulations and helps to determine proper blending equipment and correct blending procedures.

Using easy-to-read tables and simplified diagrams, the new bulletin lists standard dimensions and capacities for twin-shell lab blenders, liquid-solids blenders, standard conical vacuum tumble dryers, production solids blending equipment ranging in size from one foot to 1700 cubic feet working capacities, packaged resin-distillation pilot plants for research for small batch operations, shell and tube type heat exchangers, a new solids-flow valve specifically designed for equipment involved in blending, milling, conveying, or other such operation where the discharge and flow of dry powders and granulations must be controlled, and a new Solids-Processor combining vacuum-drying and liquid-solids blending in a single package unit which dry blends solids, disperses liquids, granulates and dries in simple sequence.

The Patterson-Kelley Co., Inc., Chemical & Process Equipment Division, Dept. PVP, East Stroudsburg, Pa.

ENVIRONMENTAL TESTING

The latest data on environmental testing and other applications for controlled atmospheric conditions is the subject of a new 32-page brochure.

An outstanding feature is a pictorial color chart summarizing latest known data at altitudes from sea level up to two million feet. It shows specific weight, pressure, acceleration of gravity, and molecular weight at the various altitudes. Other charts give technical information on atmosphere, temperature and humidity.

The brochure includes a review of the nine main environmental applications, and presents details

on 13 types of the firm's environmental chambers and low temperature freezers. These provide a temperature range from minus 225° F. to plus 1,000° F., and simulate various conditions of altitude and humidity.

In addition, the brochure includes data on temperature performance, specific heat of various substances, metal shrinkage, low temperature refrigerants, conversion fluids, temperature conversion, and temperature controls. Schematic diagrams and engineering data on Webber equipment are also given.

Webber Manufacturing Co., Inc., Dept. PVP, P. O. Box 217, Indianapolis 6, Ind.

STEEL LOCKERS

New 24-page catalog describing line of steel lockers is available.

The units covered are: single tier lockers, double tier lockers, multiple tier lockers, two-person lockers, dual lockers, duplex lockers, air-lite lockers, special lockers and basket racks. In addition to illustrations and descriptions, complete dimensional information is given for each style.

Also presented in the catalog are locker design and construction features. These include full-loop door hinge, tier head construction, inter-membered door frame, fixed door handle and the new Auto-Lock, which eliminates locker door handles by using a heavy-duty key to operate the latching mechanism.

A planning aids section provides basic locker information that will help the user in planning an efficient, economical locker layout. Complete specifications and tips on ordering simplify purchasing.

Other storage equipment detailed in Catalog 6000 includes: clip-type and standard bolt-type shelving; steel counters; wardrobe and storage cabinets; and book case shelving.

Penco Div., Alan Wood Steel Co., Dept. PVP, 200 Brower Ave., Oaks, Pa.

PLASTICIZER

New technical data sheet on "Hercoflex 900," a polymeric, high-boiling, permanent plasticizer, is available.

Developed originally to be used with vinyl acetate polymers and copolymers, the unusual properties of Hercoflex 900 have led to its use

in a wide variety of applications, including bookbinding adhesives, rug backings, latex paints, food packaging adhesives, asphalt sealing coatings and compounds, emulsion floor polishes, water-wettable adhesives.

In all of these uses, Hercoflex 900 reportedly contributes good low-temperature flexibility, adhesion to a variety of surfaces, resistance to migration, clarity, permanence, and resistance to discoloration.

Hercules Powder Co., Dept. PVP, Wilmington, Dela.

SILICONES

"How Silicones Work for the

CPI," is a new manual, said to be the first and only description of silicones for the chemical process industries, cites how various forms of silicones help design, process and maintenance engineers expand capacity, cut costs, lower maintenance, reduce downtime, increase reliability, and improve job conditions. Included is information about many silicones—from anti-foamers to foamers, from adhesives to adhesives, from paints to creams, from water repellents to dust filters. The advantages of silicone electrical insulating materials and systems in motors, are also briefly described.

Dow Corning Corp., Dept. PVP, Midland, Mich.

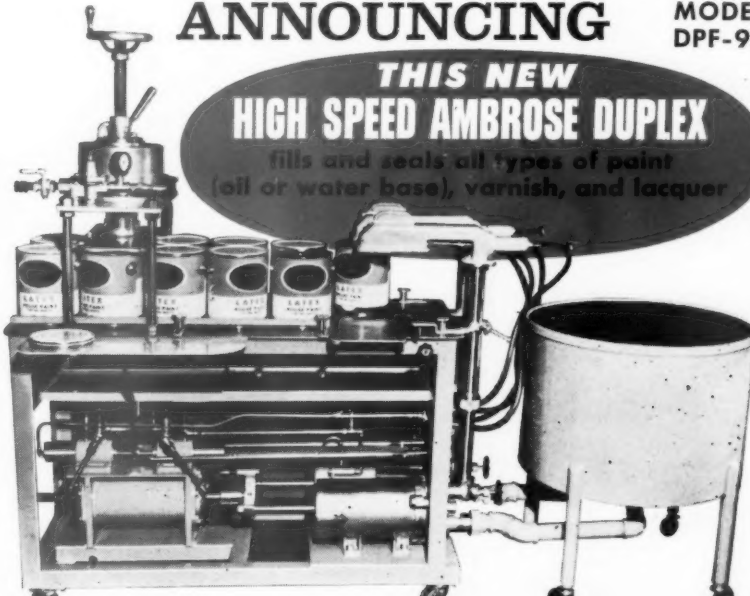
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JET CLEANERS

(From page 43)

ball mill decontamination problem. To test this conclusion, a jet-type cleaner manufactured by Sellers Injector Corp., was installed on a trial basis a few months ago.

Results have been very good. The jet cleaner mixes steam at pressures up to 125 psi with cold water to produce a powerful jet stream of hot water that blasts particles of powdered plastic out of the tiniest corners of screens and housings. After jet cleaning, not a speck of even the most staining color remains to be carried over into successive batches.

Although this guarantee of purity alone would make jet cleaning worthwhile, the company has also profited by a saving of cleaning labor. Because the high-powered jet penetrates all crevices, there is less need to call in a mechanic to disassemble the screens and grills. Down time and skilled labor are reduced.



Blasting through crevices and tiny openings in screens and grills, the jet steam cleans equipment without disassembly for manual brushing.

The jet cleaner incorporates a Venturi mixing chamber which injects steam into cold water, providing a large-volume, solid jet stream of hot water. Jet stream velocity is two miles per minute with impact that provides the hydraulic scrubbing action necessary to remove all particles of plastic from the screen and housing surfaces. To start the cleaner, the worker merely turns on the water and opens the steam valve until the desired pressure is obtained.

Dow Develops Epoxy Resins

Epoxy resins designed to give increased flexibility and toughness to conventional epoxy systems are announced by The Dow Chemical Co. Three flexible epoxy resins—X-2673.2, X-2673.6 and X-2674—are now available.

The new flexible epoxy resins are described as light colored, low viscosity fluids which may be blended with common liquid and solid epoxies, and with Epoxy Novolac 438. They are cured with all common hardeners.

Blending these flexible resins into conventional epoxy systems develops properties which vary with the concentration of flexible resin and with the hardener type. According to technical spokesmen of the firm, flexure strength can be increased 25 to 40 per cent by the addition of flexible epoxy resin. Highly flexible systems may show elongation up to 300 per cent.

Use of the flexible resins also affects other properties and these should be investigated. A. C. Drubel, Dow sales product manager for epoxy resins, said that in particular water, chemical and solvent resistance, and heat distortion may be affected. He suggests the flexible resins will find greatest use where concentrations in the range of 10–30 per cent impart maximum toughness and flexibility with attendant clarity. Shock resistant castings and adhesives, laminates, and coatings are areas of expected application.

The subject of emulsion paints for exterior wood has evoked extreme interest among the consumer, paint sales departments, and paint technologists during recent months. In view of this interest, the editors of PVP are pleased to announce the publication of a staff-industry feature on Latex Emulsion Paints for Exterior Wood in the October Convention Issue. This comprehensive feature will consist of a series of articles discussing formulation, manufacture, surface preparation and application, and test results of paints made with various latex systems now available on the market.

To keep abreast of this new concept in painting, we direct your attention to this feature in our October issue.



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...give you a *breakthrough in color* for product development. Nothing else approaches Velva-Glo for capturing and holding attention.

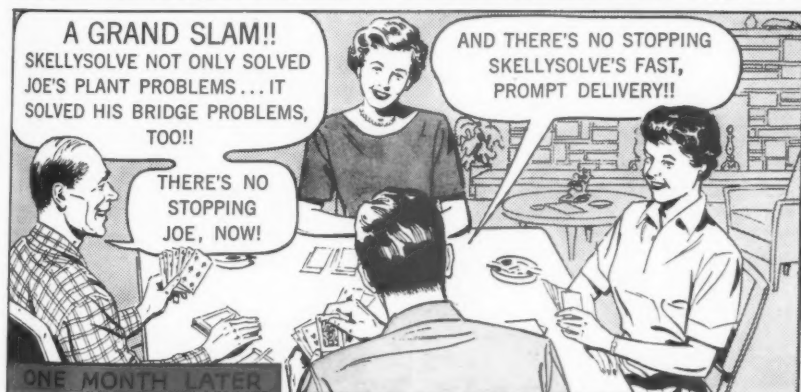
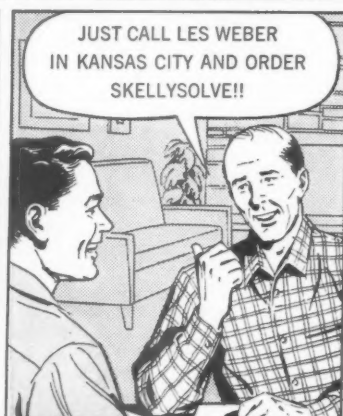
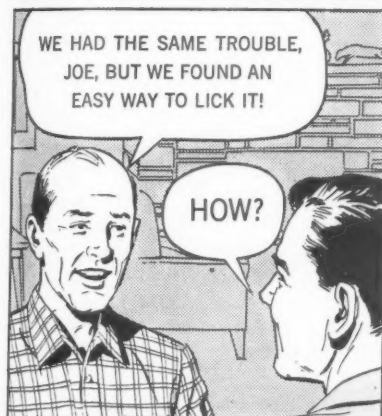
Eight exciting new colors: blue, cerise, chartreuse, red, orange-yellow, orange-red, orange, pink—for your paints, inks, plastics, latices, and coatings. Write today for free samples of pigments and Technical Bulletin No. 59.

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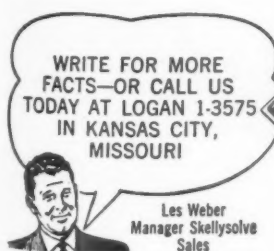
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Les Weber
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SKELLY OIL COMPANY
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SKELLYSOLVE-L. A quick-evaporating lacquer diluent of exceptionally sweet odor. Closed cup flash point about 12° F.

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SKELLYSOLVE-S2. A quick-evaporating mineral spirits. Closed cup flash point about 101° F. Excellent for industrial paints and for polishes and waxes.

SKELLYSOLVE-V. Narrow boiling range V.M.&P. naphtha. Excellent for dip and spray enamels. Closed cup flash point about 50° F.

SKELLYSOLVE-T. High boiling mineral spirits for longer, wet edge. Closed cup flash point about 140° F.

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The English Mica Co.

RIDGEWAY CENTER BUILDING,
STAMFORD, CONN.

PAINT REMOVER

(From page 45)

of the tank with a mop trimmed to about 5" strands. 2) The remover can be poured into an open container and applied around the top two thirds of tank with a soft bristled brush, to assure a heavy, even coat of remover on the surface at all times. This method is usually preferred as one saves on remover, and the loosened sludge falling into the tank, does not bury the fresh remover in the bottom.

Figure 3 shows how a good paint remover blisters the final few coats of finish, both on the inside and the outside of the tank for easier scraping. Note: At the bottom of the photo is a small mill drip tray that has been cleaned with remover. Drip trays of all sizes are easily cleaned in their horizontal position by pouring remover onto the build-up, spreading with a soft bristle brush, and scraped clean when the old film has softened.

More Mileage For Spigots

Drum spigots or molasses gates tend to become "gummed up" to the point of discarding.

Smart maintenance personnel utilize a cleaner for spray guns (a *soak* type—not the solvent type that is blown through the guns), in completely cleaning and re-using the spigots. Cleaners for spray guns that are based upon



Drum spigots come clean in soak-type gun cleaner.

methylen chloride, and of the soak type, have a water seal to retard excessive evaporation loss of the active solvents. A handy container for cleaning drum spigots is a 4 gallon kit with a parts basket. This type chemical can be used again and again. Heavily coated spigots can be placed in the basket, submerged several hours, and then flushed with plain water which will clean them down to the bare metal.

Discarding spigots, that are easily and inexpensively cleaned, is an every day source of waste in the average paint factory that mounts up in a short time.

New Pump Introduced

A new kind of pump recently introduced by the Blackmer Pump Co., Grand Rapids, Mich., is being used to build simplified, low-cost systems for proportioning liquids. According to the manufacturer, these new systems are being successfully applied to mix two or more liquids in accurate ratios, eliminating much of the costly and complicated equipment that has long been associated with continuous or so-called "line blending."

Secret of the system is the firm's new "Vari-Flo" pump. Essentially, the Vari-Flo is a vane-type positive displacement pump similar to the company's standard design but with the addition of a unique flow-changing device that varies the pump capacity from zero to full flow. The flow rate is changed instantly and accurately by means of a calibrated dial which can be operated manually or automatically.

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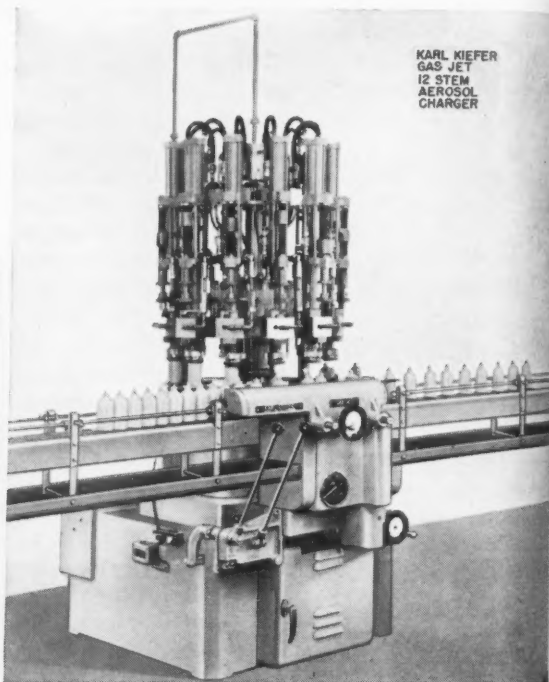
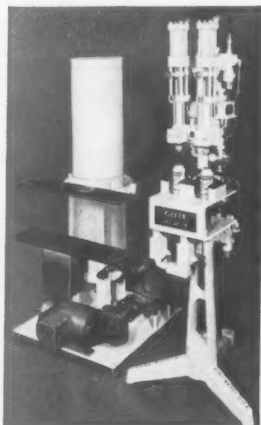
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AEROSOL COATINGS

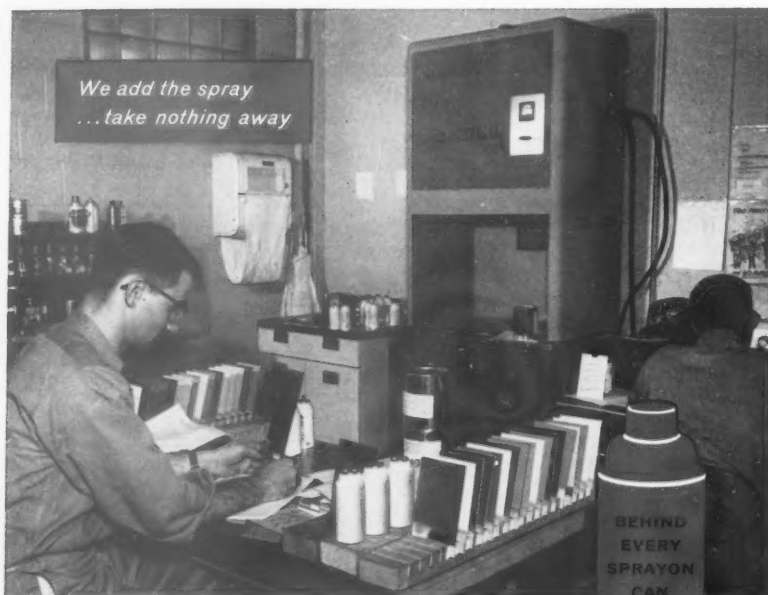
PACKAGING

FORMULATION

PRODUCTION

Laboratory filling unit is intended for experimental loading to eliminate costly and time-consuming wash-ups. For details, see page 100.





Self-spray paint troubles stop here

This is part of Sprayon's quality-control laboratory, where six full-time chemists and paint technicians make sure that your aerosol finishes—custom-loaded by Sprayon—never vary in color or performance. Before production begins, even on a routine re-order, prototype cans are made up in the laboratory and given an accelerated aging test equal to a year of shelf life. Test panels are then sprayed and the film is analyzed by precision instruments. Gloss and other characteristics are checked. Color is double-checked under a MacBeth light, the accepted standard of the paint industry. The spray pattern and the mechanical efficiency of the container are checked. All test data, materials and samples are dated, coded and filed for a year for later reference. Sprayon quality control is one reason why Sprayon has handled the greatest possible variety of contract-loading assignments for many of the nation's largest manufacturers—year after year after year. Get the full Sprayon story today.

SPRAYON PRODUCTS, INC. 2084 E. 65th St., Cleveland 3, Ohio

CONSUMER AEROSOL PROBLEMS

By
E. J. Roberts

WITH the rapid growth of the aerosol industry it is not strange that many problems and pseudo-problems, major and minor, have arisen. Practically all the real problems have been approached intelligently by the industry, many resolved while some, mostly minor, still persist. Some of the things which appeared as problems did not actually exist.

Disposal of Container

One of the minor problems of the industry has been the disposal of the containers by consumers after use. This is a real problem for which even now there is no ideal solution.

In the nature of a pseudo-problem which did not actually exist is the frequently imagined hazard in the transport of aerosols by airplane at high altitudes.

The problem of the disposal of aerosols after their contents have been dispensed is apparent to the consumers who carefully read the precautionary label which should state: "Do not heat" or "Do not incinerate" and "Do not puncture". Since most discarded refuse, particularly in the cities but also in the country, usually ends up in burning, the confusion as to how to dispose of empty aerosol cans is

readily apparent. We have not yet heard of individuals forced to move, crowded out of their quarters by the accumulation of empty aerosol cans. However, most marketers received frequent letters from buyers inquiring just how they should dispose of their emptied containers.

The precaution not to burn empty aerosols cans arises from the fact that they, perhaps alone of all packaged products, are still closed containers after their contents have been dispensed. Most everyone is aware that any closed container, even an empty bottle on which the screw top may have been returned, will burst violently if placed in a fire. Every aerosol container will likewise burst or explode if excessive heat is applied particularly if any amount of propellant is left in the can. A can which has been fully emptied and punctured however will obviously not do this. The label "Do Not Puncture" is applied, however, since if a partially filled can is accidentally, or intentionally but carelessly, punctured there may be excessive squirting and splattering of the contents as to cause property or personal damage.

With these somewhat contradictory instructions there is no wonder that the consumer is sometimes confused. In actual practice, considering the millions of aerosols used and disposed of yearly, relatively few harmful incidents have arisen. Aerosols are discarded in public refuse collections most of



1. Insert aerosol can in piercer.



2. Place cover in piercer.

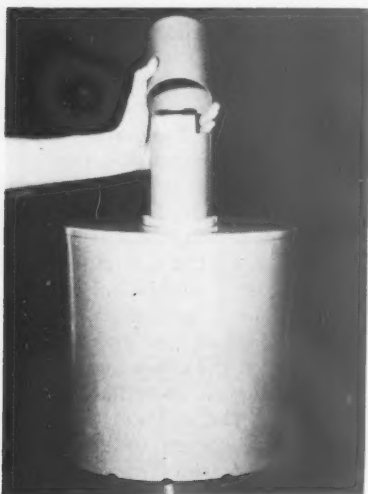


3. Tap lightly to pierce can.

which ends up in huge incinerators. Where the refuse is crushed before burning, the problem is neatly resolved. If the refuse is mixed with tons of other material no problem results.

Where it is desirable to dispose of individual cans the industry has given careful consideration to various methods for disposal. Practically all of these involve the careful and non-hazardous puncturing of the cans after full precautions are taken to insure that the contents have been fully emptied.

In aerosol loading plants, cans are often disposed of after careful emptying, usually first refrigerating or chilling the cans to reduce internal pressure, by puncturing with a common beer opener. Also some marketers of aerosols for industrial



Aerosol can disposal and product reclaiming unit.

use provide a beer opener and instructions for so disposing of containers. Also equipment for the safe puncturing of cans is now available and is used in many laboratories. These are devices which permit piercing in a closed container which avoids possible splattering if the contents are not fully emptied.

Such disposal devices are too cumbersome and expensive for the ordinary household. Likewise, the industry has considered it inadvisable to issue to the ordinary consumer any instructions involving puncturing. Unless someone can come up with a better solution most aerosol cans will be continued to be disposed of with the remaining refuse which accumulates daily in every household.

Aerosols in Flight

Quite different from the disposal problem has been the question of the movement of aerosols in airplanes at high altitudes. The reasoning is that at the lower pressures in flight the relative pressures in the containers will increase dangerously and put undue strain on the system. It is reported that the possibility of such a situation was discussed at a recent hearing investigation plane crashes.

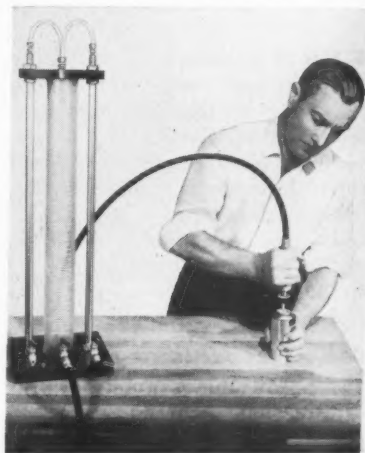
This danger actually does not exist and it is the viewpoint of aerosol experts that considering the physical characteristics of aerosols and container structural tolerances, there is no greater hazard encountered during high altitude flight than exists on the ground. A few facts makes this readily apparent. The total atmospheric pressure at sea level is about 15 pounds per square inch. Assuming that the airplane flew in the rarified atmosphere, or even in an absolute vacuum, where the air pressure approached zero, the most increased resultant pressure in the container would be 15 pounds over that which existed at sea level. When it is considered that airplanes do not, yet, fly this high, most have pressurized cabins, and the temperatures are likely to drop, the resultant increase in relative pressure is not over five or ten pounds at the most.

This increase of 5 to 10 lbs or even under the very extreme conditions of never more than 15 lbs. is insignificant relative to the structural strength of the containers. Most aerosol containers have a deformation point of at least 150 psig and a bursting strength much higher. Aerosols are not charged to over 100 psig at room temperature, most not over 40 psig. In water test baths or even in normal summer storage, the increased temperatures will result in greater pressure increases than possibly could be encountered as a result of upper atmosphere flight.

This apprehension over the hazard of aerosols in flight is an old wives tale which should be buried once and for all. That this danger does not exist is apparent when a reading of CAB Air Transport Tariff No. 6B shows no discrimination against aerosols or pressurized packages.

1000 cc Pressure Burette Announced for Aerosols By Aerosol Machinery Co.

Aerosol Machinery Co. announces a new addition to its line of aerosol machinery, the AMCO Pressure Burette for injecting the propellant into aerosol cans. Hand-operated, it is designed for small runs and laboratory work. It is portable, only 30" high, and has a heavy, solid aluminum base that prevents toppling. All parts are highly corrosion-resistant. The hand-operated injector valve has easily changed adapters for use with most of the popular makes of aerosol valves. All operating controls are located at table height on base of Burette. A shatter-proof clear plastic shield that encloses the tube provides maximum protection for the operator. Cali-



Aerosol Machinery Co.'s pressure burette injects propellant into cans.

brated in 5 cc graduations, it has a capacity of 1000 cc which eliminates need for frequent refilling. It is available for use with nitrogen at small extra cost.

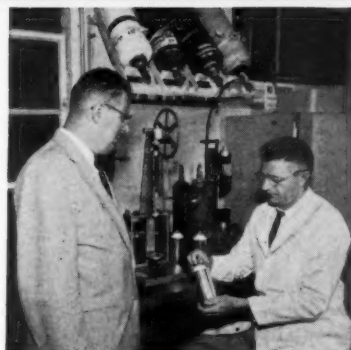
Piggy Back Rack Stacks Aerosols Cans

Illinois Bronze Powder Co. is offering an ingenious new piggy back merchandising rack for its "Spray-O-Namel." The two-piece piggy back rack displays are being provided to hardware dealers according to the number of cans of enamel stocked. Each of these racks hold 36 aerosol paint cans. Used singly, the rack is equipped with a metal litho sign which gives the properties and uses of the paint. This two-piece unit is said to be ideal for countertop display.

The contract packager had the answer... a success story from the ISOTRON file



STYMIED by unfamiliar problems in connection with marketing his line of products in aerosol packages, the marketer finds the technical assistance he needs in the office of James Bampton (left above), president of Thomasson of Pennsylvania, Inc., of Norristown, Pa., one of the nation's leading aerosol contract packagers.



In this laboratory at Thomasson, technologists work out formula adjustments in the marketer's product to adapt it for aerosol packaging.



The marketer and the production manager watch the first run of the new aerosol-packaged product on one of Thomasson's high-speed loading lines.

man with the right answers for profitable aerosol packaging

No one knows for certain what the next aerosol-packaged sales success will be. But you can be sure that the highly specialized skills of an aerosol contract packager will have a useful hand in helping move the product to market. The packager supplies invaluable advice on product formulation, can and valve selection, and propellant choice. It is a fact that leading packagers rely on Pennsalt Isotron® propellents to help their customers cash in on the aerosol market.

ISOTRON — The Key to Modern Living



Isotron Department 375
PENNSALT CHEMICALS CORPORATION
Three Penn Center, Philadelphia 2, Pa.



Pay-off of Thomasson's special knowledge comes for the marketer's product at store displays like this. Aerosol packaging brings new volume and profits.

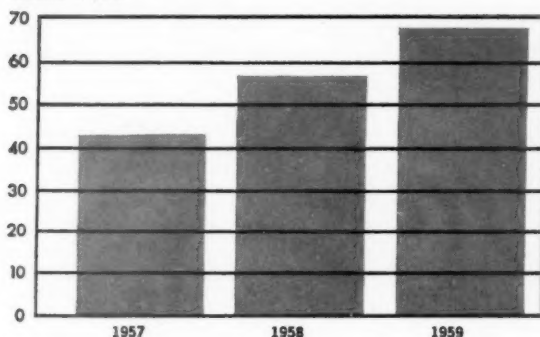
**New helpers
for “do-it-yourselfers”...a**



...aerosols!

Aerosol paint and protective coating sales, for example, have climbed 58.7%* in just 3 years!

millions of units



How the magic touch of aerosol packaging skyrockets sales!

Today, such handy "do-it-yourself" aerosol products as paints and protective coatings, car polishes and lubricants are making jobs easier, quicker and neater. Tomorrow, who knows what *new* aerosol products will capture the fancy of consumers in this important market?

If you have a product—any product—with "aerosol potential" why not call on General Chemical? As one of America's leading producers of aerosol propellants, General Chemical offers many helpful services to prospective aerosol marketers. For example, we can supply you with valuable technical data and the latest market information. We can show you promising aerosol formulations developed in our laboratories. And we can put you in touch with experienced contract fillers, capable of putting up small test runs for you or handling full-scale commercial production.

For further information—or if you would like to arrange for a special presentation—write or phone us today.

*Estimated by Market Surveys Department, General Chemical Division, Allied Chemical Corporation

genetron[®]

aerosol propellants

Putting the "push" in America's finest aerosols



GENERAL CHEMICAL DIVISION

40 Rector Street, New York 6, N. Y.

FEDERAL HAZARDOUS LABELING SUBSTANCE ACT

What it means for the aerosol industry

ON July 12, 1960, the President signed and approved the Federal Hazardous Substance Labeling Act. It is effective immediately but penalties for violation will not be imposed until six months later. Enforced by the *Food and Drug Administration* of the *Department of Health, Education and Welfare* its precautionary labeling requirement will apply to aerosol paints. Aerosol insecticides and pressurized foods, drugs and cosmetics will not be covered by this new law since they are already regulated by the Federal Insecticide, Fungicide and Rodenticide Act and the Food, Drug and Cosmetic Act.

We will not attempt here to interpret fully the implications of the new law for the aerosol industry. It will have to be studied fully. The CSMA is preparing a Labeling Manual for distribution to its members to assist them in compliance of this act. A general session at the forthcoming 47th Annual Meeting of the CSMA at Hollywood Beach, Florida in December will explain the new law, its effects and status. In the meantime, the CSMA will be prepared to consult with the F&D Administration regarding regulations to supplement the law.

The following sections of the law are of particular interest to the aerosol industry.

"The term 'hazardous substance' means:

1.(A) Any substance or mixture of substances which is toxic, is corrosive, is an irritant, is a strong sensitizer, is flammable, generates pressure through decomposition, heat, or other means, if such substances or mixture of substances may cause substantial personal injury or substantial illness during or as a proximate result of any customary or reasonably foreseeable handling or use, including reasonably foreseeable ingestion by children."

The all important and often controversial flammable properties of aerosol paints is covered in the following section of the law.

"(1) The term 'extremely flammable' shall apply to any substance which has a flash point at or below 20 degrees F as determined by the Tagliabue Open Cup Tester, and the term "flammable" shall apply to any substance which has a flash point of above twenty degrees to and including 80 degrees F, as determined by the Tagliabue Open Cup Tester; except that the flammability of solids and of the contents of self-pressurized containers shall be determined found by the Secretary to be generally applicable to such materials or containers, respectively, and established by re-

gulations issued by him, which regulations shall also define the terms 'flammable' and 'extremely flammable' in accord with such methods."

The crux of the above provision is that methods for the determination of flammability of aerosols shall be those found to be applicable after public hearings with industry. Thus as in the State of Connecticut there should be the opportunity to have the Bureau of Explosives test for aerosols adopted. It is to the vital interest of the aerosol industry that not only Federal regulations but also the individual state have standards, tests and labeling requirements which are as near identical as possible.

Of also particular interest to the aerosol industry is that section which judges a package misbranded and which fails to bear a label which states conspicuously "instructions for handling and storage of packages which require special care in handling or storage." This, of course, refers to that precautionary labeling statement on aerosols which usually reads somewhat as follows:

"Contents under Pressure. Do not Puncture. Do not incinerate. Do not heat over 120°F."

Some prefer the wording of the latter as follows:

"Keep at Room temperature—Away from Radiators, Stoves, Direct Sunlight".

The exact wording of this precautionary labeling statement is something which will have to receive considerable attention by the industry within the next several months if workable and uniform regulations are to be promulgated for the Federal law as well as those being considered by the individual states.

As a result of cooperation of federal officials and industry representatives, the new Federal Hazardous Substances Labeling Law is something which the aerosol industry can live with and can be instrumental to providing uniform regulations throughout the country. Each manufacturer needs, however, to review the law fully, study the regulations as issued and apply them to his own particular packages.



The day you get your first drum of this new *denser* nitrocellulose, you will start saving money three ways:

1. **Shipping** costs go down. Two drums contain as much nitrocellulose by weight as three used to.
2. **Storage** needs are cut $33\frac{1}{3}\%$, because one out of every three drums is no longer needed. Where you used to store six drums, you can now store the equivalent of nine.

3. **Handling** costs you less. Fewer drums, to start with. Fewer drums to dump. Fewer drums to store.

To get an idea of how much you can save with Du Pont Dense Nitrocellulose, send for specifications, samples or technical assistance. Call your Du Pont representative, or write to: Du Pont, Explosives Department, 6539 Nemours Building, Wilmington 98, Delaware.



DENSE NITROCELLULOSE
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY



Aerosol Developments

Southern Mfr. Introduces 1st Low-Priced Equipment

Designed primarily for laboratory use, the Pressure Pak Filling Unit Model 1000-M will find its way to "low run" requirement manufacturers; make possible the growth of custom filling in the paint field; facilitate expanding aerosol development and eventually gravitate to the workbench of the hobbyist

looking for new worlds to conquer, according to the manufacturer.

Manufactured by Pressure Pak, Inc., West Palm Beach, Fla., the 1000-M is said to have all the features of its bigger and higher-priced counterparts including automatically controlled filler, crimper for both cans and bottles ranging from one ounce to eighty ounces in size and a

combination fluorocarbon and nitrogen gasser. Drip, foam, powder, stream, spray, mist and metered values are compatible with Model 1000-M. To supplement the basic controls, pressure vacuum testers, leak test equipment, propellant racks, etc. are available for use with the 1000-M at correspondingly low cost.

Manually operated, Model 1000-M is intended for experimental loading to eliminate costly and time consuming wash-ups. The new filling unit accommodates all pressure-fillable products, needs little space (only eight square feet of shelf area), and requires no specialized technical knowledge to operate. Aluminum and stainless steel have been used extensively for ease of portability and effecting a significant material cost savings.

Seymour of Sycamore Develops Lead-Free Enamel In Aerosol Containers

Representing what its manufacturer, Seymour of Sycamore, Sycamore, Ill., terms a "major breakthrough in paint chemistry," a new lead-free alkyd enamel in easy-to-use, self-spraying, aerosol containers combines the fast-drying advantages of lacquer with the superior hiding power and durability of enamel.

The new product, a vinyl-modified alkyd enamel developed after several years of research, dries completely tack-free in 10 minutes, as with the four- to six-hour drying compared time required for conventional enamels. That means, according to the firm, that a second coat of the spray product can be applied after only 10 minutes, with none of the tendency of lacquers to life sub-coatings.

Available in white and 27 colors, the push-button spray enamel has almost twice the hiding power of lacquers, according to its manufacturer, and provides a smooth finish with an exceptionally high gloss. Its good flow-out and fast-dry properties minimize the possibility of orange peel or sag. These features should make it ideal as a touch-up tool for industrial use and for commercial applications such as spot refinishing of appliances damaged in assembly, handling, or installation, the company says.

THEY'RE SWITCHING TO K

Kodis
COLORS
UNIVERSAL CONCENTRATES

Pre-standardized, pre-screened, highly concentrated dispersions of excellent compatibility with both oil and water paint systems, Kodis Colors enable the user to maintain minimum inventories with maximum versatility. The broadest possible variety of shades are readily obtainable.

Kodis Colors have been found to meet all the requisites for the coloration of paint products by in-plant tinting, tube colors and for color dispensing machines. They are superior in light stability, alkali resistance and package stability. Send for samples, brochure and consult our sales service laboratory.

First Producers of Certified Colors



H. KOHNSTAMM & COMPANY, INC.

Experts in Color Technology Since 1851 • 181 Avenue of the Americas, N. Y. 10
11-15 E. Illinois St., Chicago 11 • 2632 E. 54 St., Huntington Pk., Calif.

*PATENT PENDING



Giant sized replica of Plasti-Kote Portable Merchandizing Kit.

Plasti-Kote Triggers Merchandising Campaign

A new merchandising campaign featuring consumer and trade advertising, and giant-sized portable replicas of aerosol spray paint cans, has been announced by Plasti-Kote, Inc., Cleveland, Ohio. The company came up with a giant-sized replica of the Plasti-Kote aerosol paint can. The can serves as a portable merchandising kit that each salesman can carry with him, and a point-of-sale display that can sit by a cash register, hang in a window, hang from a ceiling, or stick to a wall. The big can, colorfully lithographed to look exactly like the real product, is 18" high and 6" in diameter. It will be used by company salesmen and wholesaler salesmen.

A smaller size, 13½" high by 4½" in diameter, is also available for retailers. The top of the can comes off and inside is information on the complete merchandising, advertising and sales story of the firm. This includes a new, full-color catalog on the spray paint line, window streamers, price sheets, rush order forms, color swatches, retailer ad mats, and "how to" spray paint booklets.

New Aerosol Booklet Issued by Continental Can

The Magic of Aerosols, a new 28-page booklet, is available on request from Continental Can Co. It traces aerosol history and growth, markets and products, container availability and industry services.

The company cites unprecedented consumer acceptance as being re-

sponsible for the industry's phenomenal 8,000% growth in 10 short years; it believes that the growing number of products packaged in aerosol containers will enable the industry to achieve the projected 1,000,000,000 unit goal in 1963.

The publication relates the aerosol's evolution from the single-purpose bug bomb to the sleek, lithographed aerosol of today—dispensing over 160 assorted products. Common aerosol sizes, valves (foam, spray and stream), and propellants are explained in drawings. The specific container requirements for different kinds of products are pointed out.

Six pages of the booklet list

allied service organizations such as contract fillers, propellant and valve manufacturers available to assist marketers of pressurized products. One hundred thirty-one aerosol filling firms, twenty-one propellant suppliers and twenty-six valve manufacturers, located coast-to-coast are listed in this section.

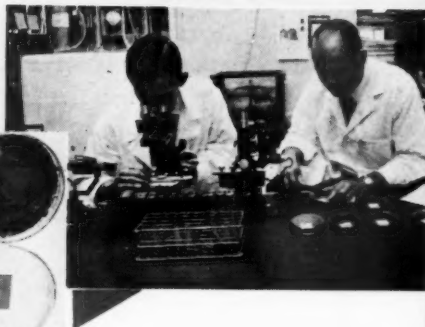
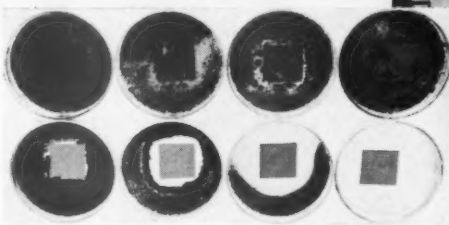
Kiefer Develops "Pin Point" Control

The Karl Kiefer Machine Co., Cincinnati, Ohio, announces a new development in the liquid filling field. It is described as "Pin Point" Liquid Level Control, and reportedly fills any container to a constant level—without sealing the container! This development accom-

TROY

MILDEW

TROY microbiological research team rating mildew resistance performance.



TROYSAN PMA-30 for latex paints

Recent studies (see inset) prove TROYSAN PMA-30 adds superior mildew resistant qualities to all latex paints. Provides the **quality** standard preservative for latex paints and the **only** mildew inhibitor exclusively specified or preferred by major latex and other raw material producers.

TROYSAN PMO-30 for non-aqueous paint

Provides exceptional mildew resistance for oil base paints. A continuous microbiological research program, together with regular study of all mildew inhibitors, maintains TROYSAN PMO-30 as the standard mildew inhibitor for oil base paints.

TROY Chemical Company offers its large scale technical services, modern laboratory and experienced personnel to help you solve your most difficult microbiological problems. You are cordially invited to inspect our facilities and to meet with our research team. We invite your inquiries.

BE SURE you receive our TROY Technical Quarterly. Drop us a note on your letterhead and we will include you on the list.



TROY CHEMICAL COMPANY

338 Wilson Avenue / Newark 5, New Jersey

plishes filling without exerting pressure or vacuum on the container, thus preventing container deformation and resulting inaccurate fill, with all the cleanliness of a vacuum filler.

Packaging Contest Announced

The ninth annual aerosol package awards contest conducted by the Aerosol Division of the Chemical Specialties Mfrs. Assn. was announced.

There will be fifteen product classifications in this year's contest, including paints, enamels, other protective coatings and paint remover. In addition, a special category for Foreign Entries has been

established in which an award will be given to the best foreign entry among all the foreign packages competing in the various product categories.

Best package will be selected in each of the fifteen groups. In addition, a "best package in the show" will be chosen from the group winners. Announcements of winners and awards of certificates will be made at the 47th Annual Meeting of the Chemical Specialties Mfrs. Assn., in Hollywood, Fla., December 5-8.

Entries will close October 15 and should be sent to Aerosol Packaging Awards Committee, 50 E. 41st. St., New York 17, N. Y.

IMPROVE

your Acrylic-type
resin emulsion
wall paints

with **CARBIUM®**

Improved Tint Base With Carbium

	Lbs.	Gals.
Rutile titanium dioxide ¹	150.00	4.1
Carbium	175.00	7.9
Silica ²	100.00	4.5
Synthetic hydrated calcium silicate ³	30.00	1.6
2% Cellosize WP 4400 solution	100.00	11.9
Potassium tripolyphosphate	1.50	.1
Tamol 731	6.00	.6
Span 20	3.00	.4
Ethylene glycol	25.00	2.7
Carbitol acetate	8.00	1.0
Colloid 581 B	2.00	.2
Water	175.00	21.0
Grind on Morehouse Mill and add:		
Vinyl Acrylic Copolymer emulsion (55% solids)	235.0	25.8
Water	45.0	5.4
2% Cellosize WP 4400 solution	120.0	14.3
	1175.50	101.5

Test	Initial Viscosity . . . 80 KU	Reflectance . . . 88.2
Results	Angular Sheen . . . Low	Contrast Ratio938

¹ TiPure R510, duPont or equivalent. ² #19 Silica, Whittaker, Clark & Daniels, or equivalent. ³ Micro-Cel T38, Johns-Manville, or equivalent.

You get improved sheen and color uniformity on overlap and touch-up in tint bases containing Carbium. Hiding quality is increased. Low water demand contributes to low viscosity and improved application characteristics. For details write Diamond Alkali Company, 300 Union Commerce Bldg., Cleveland 14, Ohio.



**Diamond
Chemicals**



Gas Cylinder Aluminum Paint

Illbronze Introduces Offer To LP Gas Packagers

Illinois Bronze Powder Co., Chicago, Ill., is making a nationwide introductory offer to all liquid propane gas packagers. This offer, being made by direct mail, introduces the gas packager to the firm's gas cylinder aluminum paint.

Upon request, the dealers receive a free six ounce aerosol can of this metallic paint and price lists on bulk cans. The six ounce sample can contains the same paint as is available in bulk cans of one gallon, five gallons and 55 gallon drums.

Colton Names Kinsley Chief Engineer

Appointment of Lewis H. Kinsley as chief engineer of the Arthur Colton Co., Detroit 7, Mich., was announced.

Mr. Kinsley has been associated with the firm as chief engineer-packaging machines since he joined the firm early last year. Before that he had been Vice-President in charge of engineering and sales for Hope Machine Co. of Philadelphia.



Constituent Society Meetings

Baltimore, 2nd Friday, Marty's, Park Plaza Hotel.

Chicago, 1st Monday, Furniture Mart.

C.D.I.C., 2nd Monday.

Cincinnati — Oct., Dec., Mar., May, Dick Perfidio's Wishing Well.

Dayton — Nov., Feb., April, Hotel Gibbons.

Columbus — Jan., June, Sept., Everglades.

Cleveland, 3rd Friday, Cleveland Engineering & Scientific Center.

Dallas, 1st Thursday after 2nd Tuesday, Lucas B & B.

Detroit, 4th Tuesday, Rackham Building.

Golden Gate, Monday before 3rd Wednesday, Sabella's Restaurant, San Francisco.

Houston, Monday prior to 2nd Tuesday, Rams Club.

Kansas City, 2nd Thursday, Pickwick Hotel.

Los Angeles, 2nd Wednesday, Montebello Country Club.

Louisville, 3rd Wednesday, Sheraton Hotel.

Montreal, 1st Wednesday, Queen's Hotel.

New England, 3rd Thursday, University Club, Boston.

New York, 1st Thursday, Brass Rail, 100 Park Ave.

Northwestern, 1st Friday, St. Paul Town and Country Club.

Pacific Northwest, 3rd Thursday, Washington Athletic Club, Seattle, Wash.

Philadelphia, 2nd Thursday, Philadelphia Rifle Club.

Piedmont, 3rd Wednesday, Rainbow Supper Club, High Point, N. C.

Pittsburgh, 1st Monday, Gateway Plaza, Bldg. 2.

Rocky Mountain, 2nd Monday, Republican Club, Denver, Colo.

St. Louis, 3rd Tuesday, Rugger's.

Southern, Annual Meetings Only.

Toronto, 3rd Monday, Oak Room, Union Station.

Western New York, 1st Monday, 40-S Club, Buffalo.

Silicone Water Repellent Suitable For Aerosol Spray

New air curing silicone water repellent designed to provide improved durable water and weather resistance for leather, paper and paperboard products has been developed by the Silicone Products Department of the General Electric Co., Waterford, N. Y.

Designated SS-4024, the new material acts without catalysis or thermal cure and can be applied by spraying, brushing, swabbing, dip and roll coating without any provision for heat after application. It is ideally suited for packaging in aerosol spray cans for consumer application.

A solvent solution of silicone polymers and other film-forming components, SS-4024 is effective as a coating in the manufacture of paper and paperboard materials for use in shipping cartons which may be exposed to dampness and tough environments and for filters where separation of oil and water is desired. As a water repellent for leather it can be used to treat garment suedes, shoe upper leather, leather soles, gloves, sports equipment, luggage, gaskets, diaphragms and belts.

Concentration of SS-4024 in the coating composition depends on the equipment being used and the material being treated. Concentration of the material in solvent is effective in most applications within a 5 to 15 per cent range.

Dupli-Color Names Kendall Technical Director

The appointment of Stanley E. Kendall as technical director has been announced by Dupli-Color Products Co., Inc., of Chicago, major manufacturer and pioneer of automotive and household paints marketed through automotive and hardware distributors and chain stores throughout the world.

Formerly chief chemist for a large mid-western aerosol paint manufacturer, Mr. Kendall brings twelve years of extensive paint formulation experience to the firm's research laboratories. To keep pace with the rapidly expanding market for aerosol and conventional paint products, Mr. Kendall will supervise the acceleration of formulation methods through increased, highly specialized laboratory facilities.



CALENDAR

September 11-16. National Meeting of the American Chemical Society, New York City.

September 26-30. Instrument Society of America, Instrument-Automation Conference and Exhibit, Coliseum, New York City.

September 28-29. 27th Annual Tung Industry Convention, Edgewater Gulf Hotel, Edgewater Park, Miss.

October 6-7. National Assn. of Corrosion Engineers, Western Conference, San Francisco, Calif.

October 6-8. National Assn. of Corrosion Engineers, Southeast Conference, Atlanta, Ga.

October 6-8. Southern Paint Dealers Assn., Annual Convention and Exhibit, Robert Meyer and George Washington Hotels, Jacksonville, Fla.

October 11-14. National Assn. of Corrosion Engineers, Northeast Conference, Huntington, West Va.

October 17-18. American Coke and Chemicals Institute, Annual Meeting, Greenbrier, White Sulphur Springs, West Va.

October 17-19. American Oil Chemists' Society, Fall Meeting, Hotel New Yorker, N. Y.

October 19-20. National Assn. of Corrosion Engineers, North Central Conference, Milwaukee, Wis.

October 20-22. National Paint Salesmen's Assn., Annual Convention, Wiklard Hotel, Washington, D. C.

October 25-27. National Assn. of Corrosion Engineers, South Central Conference, Tulsa, Okla.

October 27-29. National Paint, Varnish & Lacquer Assn., 73rd Annual Meeting, Drake Hotel, Chicago, Ill.

October 29-Nov. 2. Federation of Societies for Paint Technology and 25th Paint Industries Show, 38th Annual Meeting, Sherman Hotel, Chicago, Ill.

October 31. American Management Assn., Packaging Management Course, Hotel Astor, New York City.

December 3-9. Chemical Specialties Manufacturers Assn., 47th Annual Meeting, Hollywood Beach Hotel, Hollywood, Fla.

February 23. Protective Coatings Div. of the Chemical Institute of Canada, Divisional Conference, Toronto, Ontario.

February 24. Protective Coatings Div. of the Chemical Institute of Canada, Divisional Conference, Montreal, Quebec.



*one tank wagon
instead of 90 drums*



CELLOFILM nitrocellulose solutions

The advantages of buying solutions in tank wagons are obvious
— you eliminate drum handling... save drum storage space
... and save on labor. Only Cellofilm offers nitrocellulose
solutions at any viscosity, in any combination of solvents,
in tank wagons as well as in drums. Buy the modern way,
as you do solvents. Our engineering department will
show you how simply and economically your plant can
be adapted to receive bulk deliveries. Write or phone today.

for over 40 years the solution for your problems

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NEWS

NEWS OF COMPANIES, ASSOCIATIONS
TECHNICAL GROUPS
ITEMS OF GENERAL INTEREST



Officers of the newly organized Florida Paint, Varnish & Lacquer Assn. From left-to-right: Fred L. Chase, Secretary; Alton J. Ward, Vice-President; Harry E. Stone, President, and Dudley B. Blake, Treasurer.



The Wallerstein Co., a division of Baxter Laboratories, has announced a new process, the result of a research breakthrough, which for the first time makes Dihydroxyacetone (DHA) available as an industrial chemical. In the photo above, standing, left to right, are biochemist Theodore Cayle and microbiologist Samuel R. Green, given chief credit for the development. Seated, extreme left, Dr. Edward J. Beckhorn, research director, and, extreme right, Dr. Robert C. Ottke, director of commercial development.

Paint Show Sold Out

All space in the 1960 Paint Industries' Show has been sold.

This was revealed by Leslie A. Martin, Chairman of the Paint Show Committee of the Federation of Societies for Paint Technology. All space, including the addition of some 2,700 square feet of exhibit

area, has been reserved by 105 raw material and equipment suppliers to the paint, varnish, and lacquer industry.

The Show will be held at the Sherman Hotel in Chicago on October 29, 31, and November 1 and 2, concurrently with the Federation's 38th Annual Meeting.

Wood Identification Program Sponsored by Eastman

New wood finish identification program sponsored by Eastman Chemical Products, Inc., subsidiary of Eastman Kodak Company identifies furniture which has the protection afforded by a topcoat lacquer formulated with Eastman's Butyrate resin.

Identification decals, approximately 1" x 2½" in size, are supplied on a share-the-cost basis to cooperating suppliers of butyrate wood finishes. The decals are of the standard water transfer type, or else they can be supplied with pressure-sensitive adhesive backing. The wording on the decal briefly states that the finish is afforded protection through the use of a butyrate lacquer. The finish tradename or company name of the finishing material supplier completes the copy.

The literature piece is furnished by Eastman to the finishing material supplier, who in turn, distributes it along with the identification decals to his participating customers, the furniture manufacturer. They then are included with the shipment of decal-identified furniture, or handled in any other way the furniture manufacturer thinks would reach the audience for which they are intended. . . the retail furniture salesman.

Essentially, the literature piece draws attention to the decal, urging its use to sales advantage. Additionally, it points out the finish features. . . resistance to age discoloration, and staining from rubber based accessories, water, and alcoholic beverages. Except for the single copy line, "this decal is your cue. . . use it to advantage," the back of the literature piece as supplied is blank, thus providing space for overprinting brands and trade names by the participating manufacturers.

The first finishing material supplier to participate in this program with Eastman is the Grand Rapids Varnish Corp., Grand Rapids, Mich. Long active in finish educational programs for the retailer, Grand Rapids presently has a number of customers who are using their Guardsman Butyrate lacquer, and adding the sales appeal inherent in finish identification.

NEWS

American Mineral Spirits Expands Chicago Office

American Mineral Spirits Co. is expanding its Chicago office and moving to modern quarters in the Borg-Warner Building, 200 South Michigan Ave., Chicago 4, Ill.

As distributors and marketers of petroleum solvents and chemicals, American Mineral Spirits Co. has branch offices in principal cities throughout the country as well as complete distribution facilities in important industrial areas.

Continental Names Reservoir

The Reservoir Corp., Boston, Mass., has been appointed distributor for Continental Can Co.'s general line cans. The Boston-based company will service the New England states of Maine, New Hampshire, Vermont, Rhode Island, Massachusetts and northern Connecticut.

Reservoir Corp. will maintain warehouse stocks of Continental's line of utility cans, straight sided and flaring pails, paint and chemical containers, F-style (oblong) cans and 5-gallon square cans. Both rail and trucking facilities aid distribution from a warehouse set-up located in the Greater Boston area.

Tappi Conference Announced

The 15th Plastics-Paper Conference, sponsored by the Technical Association of the Pulp and Paper Industry will be held at the Hotel Syracuse, Syracuse, N. Y., October 17th to 19th, under the general chairmanship of V. T. Stannett, New York State College of Forestry, Syracuse, N. Y.

The three-day technical program is being planned by a sub-committee under the chairmanship of R. W. Loheed, Chas. T. Main, Inc., Boston, Massachusetts.

Five half-day technical sessions are scheduled as follows:

1. Wet Strength and Interfiber Bonding Session, K. W. Britt, Scott Paper Co., Chester, Pa., Chairman.
2. General Plastics-Paper Session, W. N. Stickel, Texon, Inc., South Hadley Falls, Mass., Chairman.
3. Plastics Coating Session, G. L. Booth, Dilts Div., Black-Clawson Co., Fulton, N. Y., Chairman.
4. Plastics Laminates Session, H. A. Spencer, Knowlton Bros., Watertown, N. Y., Chairman.
5. Synthetic Fiber Paper Session, T. A. Howells, The Institute of Paper Chemistry, Appleton, Wis., Chairman.

Japanese Firm Organized

Organization of a new company, Morimura-Standard Ultramarine & Color Co., Ltd., has been announced in Tokyo, Japan. The formal announcement was made jointly by the two parent companies, Standard Ultramarine & Color Co. of Huntington, West Virginia and Morimura Bros., Inc. of Tokyo, at a dinner held at the Hotel New Japan, Tokyo.

The announcement was made by Mr. Y. Morimura, President of Morimura Bros., Inc., and Dr. W. H. Stark, Executive Vice President and General Manager of Standard Ultramarine & Color Co.

It was stated by Mr. Paul Morimura, President of SUCO Japan, that plans are completed for the construction of the plant which will produce chiefly alkali blue pigment products. Scheduled completion date for the new plant is January 1, 1961.

for
**WATER
RESISTANCE**
and
BETTER FLOW
use:

COFAR



COFAR is an Acrylic Polyvinyl Acetate Copolymer Latex. Paints based on Cofar show good flow, color retention, freeze/thaw stability and low temperature coalescence. Low particle size assures quality paints at high pigment concentrations and reduced costs.

Use COFAR for interior and exterior paints — primer sealers — excellent for rough surfaces such as brick, stucco, cinder block and masonry.

Solids	55 ± 1%
pH	4 — 5
Average Particle size ..	.2 Micron
Freeze-thaw resistance ..	Excellent
Mechanical Resistance ..	Excellent
Borax Stability	Excellent
Water Resistance	Better than average PVA
Weight per gallon	8.9 — 9.1 lbs.

Varnishes

Emulsions - Alkyds

FARNOW

Stillwell 6-1144

FARNOW, INC.
4-83 48th Avenue
Long Island City 1, N. Y.

NEWS

Paints Developments To Highlight Fall Course

The latest developments in paint manufacturing, including emulsion paints and epoxies, will be features of the Rutgers Newark Extension Center's evening course this fall in Fundamentals of Paint Technology.

This basic course will be given on Monday evenings from 8:10 to 9:50 beginning September 19th in downtown Newark.

In addition to discussions on the latest paint developments, the instruction will cover the basic principles of formulation. Included will be oils, resins, solvents, varnishes, lacquers, and driers. The course will also cover processes and control equipment, color matching, and the relation of products to sales.

The course is designed for persons who work in laboratories, as well as in plants and offices of paint corporations. It is of particular value to salesmen of paint raw materials and finished products.

William Lawrence, newly appointed supervisor of the Pigment Laboratory at Ciba Co., Inc., Fair Lawn, N. J., is the instructor.

Nopco Installs New Labs

In line with its overall expansion and development program, Nopco Chemical Co. has installed new laboratories for its Industrial and Fine Chemicals Divisions. The new facilities will better enable the firm's specialists to continue research, service the needs of its customers and find new applications for its products.

The laboratories are equipped to duplicate many of the processes found within industry. To name only a few, conditions similar to those of the tanning, paper, textile and paint industries are created in small scale laboratory apparatus. Tests are run on customers samples to determine ways and means of improving quality through chemical application and to solve specific problems inherent to particular companies.

Hercules to Go "Down Under"

Hercules Powder Co. announced plans for the construction of a plant in Australia to produce rosin based emulsifiers for use in the manufacture of synthetic rubber and chemicals. The plant will be erected on a site at Springvale, Victoria, near Melbourne, and production is expected to commence in 1961. The emulsifiers will be utilized by the Australian Synthetic Rubber Co. under a long-term sales agreement.

Actual production will be undertaken by Hercules Powder Co. (Australia) Pty., Ltd., which, as previously announced this year, is now being organized as a company owned by Hercules Powder Co. of the U. S. A. and by A. C. Hatrick Pty., Ltd. of Australia.

John A. Franklin Celebrates 50th Year with Whittaker

Following his arrival in this country, from England, to seek good fortune here, John Franklin commenced a successful career with Whittaker, Clark & Daniels, Inc. as office boy.

His ambition to succeed 50 years ago was soon to be realized with his promotion to Secretary and thereafter to Secretary-Treasurer of Whittaker, in which position he is currently serving that company.

Name Changed

It has been decided to change the name of the United States Bronze Powder Works, Inc. to United States Bronze Powders, Inc.

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NEWS

Benjamin Moore Moves

Benjamin Moore & Co. announces the moving of its corporation offices to 548 Fifth Ave., New York 36, N. Y. Executives and personnel from the following corporation departments will be included in the move: Administrative, Financial, Technical, Production, Purchasing, Sales, Advertising, Merchandising, Decorating and Color, Traffic and Personnel.

Government Issues Publishes Packaging Revision

Printed copies of the tenth edition of Simplified Practice Recommendation for Paints, Varnishes and Related Products, R144-60, have become available. The revision changes the method of packaging putty, glazing and calking compound products from a weight basis to a volumetric basis. This method of packaging these items will reduce the variety of containers needed, thereby attaining greater simplification and standardization.

Copies of R144-60 may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price is 10 cents a copy.

Case to Hold Symposium On Drying and Aging of Paint

"Paint-from Wet to Dry," a symposium on the physical processes of the drying and aging of paint will be held at Case Institute of Technology, September 8, 9 and 10.

Sponsored by the Cleveland Society for Paint Technology, Cleveland Paint, Varnish and Lacquer Assn. and Case, the sessions will be addressed by leading authorities in the industrial and educational paint fields.

Discussion will center around today's understanding of the formation, properties and stability of paint films and will include an examination of the modern approach to the measurement of film formation properties and stability.

Dr. Edward G. Bobalek, Professor of Chemical Engineering at Case, is director of the program, which is expected to draw more than 100 participants.

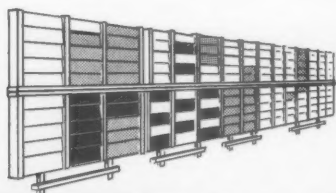
Ashland Breaks Ground For Petrochemical Unit

The conversion of petroleum into commercial quantities of naphthalene came a step closer to reality when Ashland Oil & Refining Company, Ashland, Kentucky, broke ground for the construction of its newest petrochemical unit.

Designed to produce approximately 75 million pounds of naphthalene and several million gallons of benzene annually, the petrochemical unit will be integrated with Ashland Oil's 80,000 barrel per day refinery, near Ashland.

Universal Oil Products, which cooperated with Ashland Oil's research groups in development of the commercial operation of the new process, is handling the licensing of the "Hydeal" process domestically and overseas. Badger Manufacturing of Cambridge, Massachusetts, is constructing the plant, with completion planned for February, 1961.

According to Ashland, the new petrochemical unit will be the first in the world to manufacture commercial quantities of naphthalene from petroleum. Eighty per cent of the production capacity is already under contract, with standby orders for the balance upon completion of the unit.



A new latex resin now enables you to produce latex formulations fortified with the time-proven advantages of zinc oxide.

Now you can formulate a latex paint of superior mildew resistance together with these properties imparted by zinc oxide:

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life is no longer a problem—as proved by the extensive tests of six independent laboratories.

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NEWS

Wagner Co. Celebrates Golden Anniversary

This year marks the golden anniversary of the founding of Charles A. Wagner Co., Inc. of Philadelphia. The company was founded in 1910 by Mr. Charles A. Wagner and incorporated in 1920 with Mr. Wagner as President.

The company specializes in the distribution of extender pigments and fillers to the paint, rubber, plastics, paper, ink and cosmetic industries. In addition, specialty items are supplied to the feed and chemical industries. The company represents leading producers of these mineral products and maintains warehouse facilities in Philadelphia. Edward Rabon is Vice President and Sales Manager.

American Alkyd Producing Synthetic Resins

American Alkyd Industries is now producing synthetic resins in its newly constructed plant located in Richmond, Calif.

The new plant will produce up to one-half million pounds of resins per week, according to the company. Because it is a major supplier to the plastics and paint industries, the firm's laboratories and production facilities are equipped to produce a diversified group of synthetic resins, as well as custom formulations. The construction of the California plant is the second major step in the expansion program of the company. To meet the growing demands for its products, the company has recently expanded its original plant located in Carlstadt, N. J.

International Process Merged With Patterson Foundry

Two leading producers of machinery for paint, chemical, plastics and other process industries have been merged. International Process Equipment Co. of Dayton has become a Division of The Patterson Foundry and Machine Co.

All production and management activities will be conducted at the Patterson facilities in East Liverpool, Ohio. The sales forces of the

two firms have been expanded, and International will operate as International Process Equipment Co. Division of Patterson.

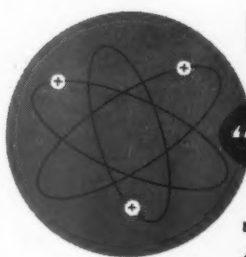
American Cyanamid Moves

American Cyanamid Co. announced the relocation of the headquarters of its Plastics and Resins Division to Wallingford, Conn. as of August 1, 1960. Plastics and Resins Division executive offices to be located at Wallingford, Connecticut are: Executive Department, General Sales Department, Sales Promotion Department, Advertising Department, Manufacturing Department, Technical Department, and Accounting Department.

Innes Buys Assets of ADM Resins Operations

Archer-Daniels-Midland Co., Minneapolis, and O. G. Innes Corp., New York, have announced the sale of the assets of ADM's natural resins operations to O.G.I., a pioneer in the marketing of these resins. Innes will continue to service ADM customers with the same imported resins ADM has supplied.

The Innes corporation has specialized in natural resins and processed resins since the turn of the century. These materials are used principally by the coatings, adhesives and composition industries, especially in paints, varnishes and lacquers.



HOW ST. JOE'S NEW

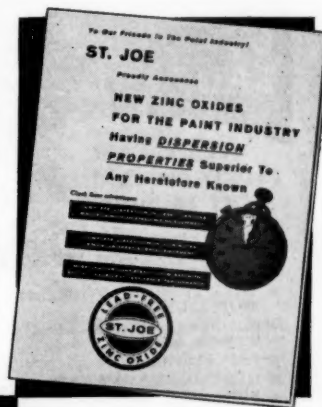
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PERSONNEL CHANGES

FRANCE, CAMPBELL & DARLING

Herman W. Kristeller has joined the sales staff.

Mr. Kristeller will be promoting the sale of the firm's line of synthetic resins, alkyd and copolymer vehicles to the manufacturers of trade sales and industrial finishes.



H. W.
Kristeller



Robert
Roeder

PATTERSON-SARGENT

Robert Roeder has been appointed Manufacturing Manager. Mr. Roeder will supervise all phases of manufacturing and allied operations.

HEYDEN NEWPORT

C. H. Shields, Jr. has been appointed Manager of the Market Research and Development Department.

Mr. Shields has been supervisor of new product development, responsible for co-ordinating all activities relating to initial marketing of new products.

CLASSIFIED ADVERTISEMENTS

Rates: \$.20 per word, except those seeking employment, for which rate is \$.10 per word. Minimum: ten words. Address all replies to Box Number, c/o Paint and Varnish Production, 855 Avenue of the Americas, New York 1, New York.

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Experienced Paint Chemist wanted to take full charge of paint laboratory of medium size Eastern manufacturer making complete line of chemical-resistant coatings; must also be able to do development work. Excellent opportunity for advancement. Send complete resume on educational background and previous experience, including photo, and indicate salary requirements. Box 960.

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SOUTHWESTERN STEEL

Gordon W. "Buck" Rogers has joined the Sales Staff.

Mr. Roger will maintain his headquarters at the plant's main office in Dallas, and will contact steel pail and drum users in the southwest.



G. W.
Rogers



Leo
Forth

SHERWIN-WILLIAMS

Leo Forth, Jr., superintendent of technical service at the Los Angeles plant has been named project manager of the company's industrial sales division.

In his new post Mr. Forth will direct new products development for the industrial division, particularly as it relates to product finishing systems.

NEW JERSEY ZINC

The following changes in sales and purchasing have been announced:

Robert W. Munson has been appointed Southern District Sales Manager in charge of a new sales district, with headquarters in Atlanta.

Alfred Ohlander has been named Pacific District Sales Manager, with headquarters in Los Angeles.

Robert J. Delack, formerly pigment sales representative of the New York office, has been placed in charge of the sales office in Boston.

Frank A. Gilson has become a pigment sales representative, assigned to the New York Metropolitan area.

J. Stuart Collbran, Jr. has been appointed Manager of Purchasing with headquarters in New York.

ORONITE CHEMICAL

Edward J. McLaughlin has been named Manager, Sales and Product Development for the company's recently created Petroleum Chemicals Division.

In his new post, Mr. McLaughlin will supervise marketing, technical service and development for all the division's products which include lubricating oil additives, high temperature hydraulic fluids, butadiene and catalysts.

REICHHOLD CHEMICALS

Jack R. Sigelbaum has been appointed Sales Manager of the newly established Plasticizer Division.

DELKOTE

John H. Whiteside, has been named Chief Chemist.

MARY CARTER PAINT

Virgil H. Vedda has been named Vice-President in charge of Research and Development.



V. H.
Vedda



J. H.
Sanders

EASTMAN CHEMICAL

John H. Sanders has been named sales manager of the chemicals division.

COLUMBIAN CARBON

E. H. Baker has been appointed General Manager.

PITTSBURGH PLATE

A. Donald Wagen has been named as Manager for the Houston Paint Division.

He will succeed James F. Crouch upon his retirement after 26 years of service with the company.

M. W. PARSONS—PLYMOUTH

Edward B. Twombly Jr. has been appointed Vice President in Charge of Sales.

Philip D. Reed Jr. continues in his capacity as Vice President in Charge of Operations.

MARBON CHEMICAL

Donald E. O'Connell has been appointed Technical Sales Representative for all of Ohio, Indiana, Michigan and western Pennsylvania.



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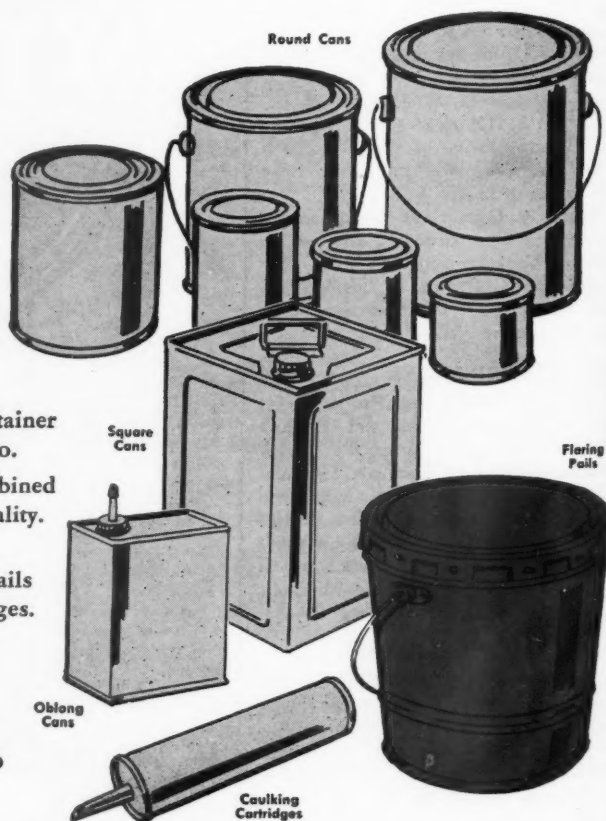
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